

Food Product Identification -Why The Industry Fears It

or

The Secrets of Complying With The 2008 Farm Bill Without Bringing Your Company to Its Knees

The inside story about Food Product Identification, Country of Origin Labeling and the protection of our nation's food chain from bio-terrorism

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Designed for lawmakers, food industry stakeholders, owners, and managers

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Executive Summary

The Current Situation.

In a post-9/11 world where fears of bioterrorism loom and massive food recalls occur with frightening regularity, consumers are demanding country of origin information. Consumers are no longer comfortable putting food on the family dinner table without knowing where it came from. They want to feel confident that retailers are providing them with correct product information and that they are getting what they are paying for. Consumers want to know that tainted products can quickly and efficiently be traced through the supply chain in the event of a recall. To protect their health, as well as their pocket book, Americans are insisting that the food industry provide accurate country of origin labeling and traceability.

The government has heeded consumers' calls for country of origin labeling (COOL) by passing the 2002 Farm Bill, which mandated COOL and item traceability for beef (including veal), lamb, pork, fish, fresh and frozen fruits and vegetables, and peanuts; the interim final rule for mandatory COOL became effective April 5, 2005 for fish and shellfish. ("Agricultural marketing service," 2009) More recently, Congress enacted the 2008 Farm Bill, which expanded the list of covered commodities to include chicken, goat meat, ginseng, pecans, and macadamia nuts, and included provisions for labeling products of multiple origins. On March 16, 2009 the new COOL requirements were put into effect, meaning that COOL was no longer voluntary, but mandatory for retailers whose invoice value for fresh and frozen fruits and vegetables exceeds \$230,000 during the calendar year. ("Agricultural marketing service", 2009) However, retailers cannot provide country of origin information to consumers if they do not receive this information from their vendors.

The Problem.

Despite seven years' lead time, consumer demand for COOL, and new laws *requiring* COOL and item traceability, the food industry has been reluctant to comply with country of origin mandates. Suppliers, especially smaller businesses, have feared that changing established business practices to meet COOL requirements would simply be too expensive and too complicated to be feasible. They fear that modifying time-tested procedures used to move perishable food products quickly to market will cost exorbitant amounts – costs that will be passed onto the consumer, or worse, cause them to go out of business.

Most suppliers are accustomed to using a simple line-item based/item code inventory control system and are unsure how to transition from established plant operations to the newer procedures necessary for efficient tracking and labeling of products. Their inventory control systems may not have the tools to support them in their efforts to comply with the law. Without a clear understanding of how to meet the new COOL guidelines and lacking an effective method of inventory control, suppliers have been trapped by their own fear and inertia.

There IS an Answer.

There is a solution to the problem, however. Traceability and country of origin labeling *can* be accomplished at reasonable costs using what is called a perpetually *lotted* approach to inventory control. In a perpetually lotted inventory system, lots, or physical batches of items with the same basic attributes, are recorded as separate records, many of which can then be associated to the same item code. For example, cod fished from Canadian waters would be tracked separately and physically segregated from cod originating from U.S. waters. Or, for instance, spinach that is received from one supplier would be kept separate from spinach received from another supplier.

These lots are then assigned individual identification numbers. Additional attributes can be recorded at the lot level, including the lot's origin, where it was processed, grade, size, date of harvest or purchase, landing ports, etc. By adding this information once, it can be passed along through the inventory cycle, and automatically entered on all necessary paperwork and labels. This information is retained for a period of time beyond when the product is actually sold. If an item is recalled, it can be traced along the supply chain, from vendor to vendor, to find the original contaminated lot, making recalls faster and more efficient.

Implementing a perpetually lotted inventory system requires plant practices to be modified and involves an initial expense in time (training) and money (software); however, over time, a perpetually lotted inventory system will be less expensive to maintain and involve less labor than clinging to an inadequate item based inventory control system.

Understanding the Problem - Consumers demand 'countries of origin' labeling, but suppliers drag their feet

Recalls are Increasingly Frequent.

Major food recalls are frequently in the news, raising questions about the safety of America's food supply and the country's ability to quickly and efficiently trace contaminated items back to their point of origin. In January 2009 the Food and Drug Administration (FDA) and Centers for Disease Control and Prevention (CDC) recalled King Nut peanut butter and all products made with peanut butter or peanut butter paste after authorities determined the peanut butter was contaminated with *Salmonella* Typhimurium. Nearly 500 people from the United States and Canada became sick as a result of the wide-reaching *Salmonella* outbreak. ("Salmonella serotype Typhimurium," 2009)

Barely two months later, in March 2009, nearly one million pounds of pistachios were recalled due to possible *Salmonella* contamination. Although no conclusive evidence has linked the recalled pistachio products to human illness, a connection could not be ruled out. ("Update on pistachio," 2009)

The possibility that food products may inadvertently become contaminated and unknowingly consumed is worrisome, however, a more sinister and potentially wider-reaching danger exists – a bioterrorist attack. In the event an attack occurred, officials would need to be able to quickly verify the origin of the contaminated products in order to locate the threat and protect the country's food supply.

In today's global economy, the need for product traceability is greater than ever, as more and more imported food is being consumed by Americans each year. In fact, over the last twenty five to thirty years, Americans have steadily consumed increasing amounts of imported food products. According to the USDA, 15% of all food consumed in the U.S. is imported, compared to 4% in 1980. (Jerado, 2008)



Food safety can no longer be taken for granted. The hamburger served at last weekend's barbeque might turn out to be the source of next week's E. coli outbreak; the fruit served to thousands of children as part of a school lunch one day could be the focus of a bioterrorism investigation a few days later. Consumers want to know that contaminated items can quickly be identified and removed from the country's food supply.

Consumers Demand Knowledge.

Recent studies have found that consumers are demanding country of origin labeling. Consumers believe they have a right to know country of origin information and are willing to pay a premium for U.S. origin labeled products. A June 2007 *Consumer Reports* poll found 92% of consumers feel food should be labeled with country of origin information ("CR survey," 2007). Another poll conducted in July 2007 by Zogby Interactive (2007), an industry leading online polling organization, found that:

- 74% of consumers say it's important to them to know the country of origin for all types of products they buy
- 85% of consumers feel it is important to them to know where their food comes from
- 94% of consumers believe that they have a right to know the country of origin of the foods they purchase.

The Consumers Union, a non-profit consumer advocacy organization and publisher of *Consumer Reports*, also advocates country of origin labeling (COOL), stating: "We continue to believe that COOL should cover as many items as possible as it is clear that consumers desire to know where their food is coming from." ("Consumers union's comments," 2007)

In response to consumer demand for country of origin labeling, the U.S. Congress passed the 2002 Farm Bill which mandates COOL and traceability – for beef (including veal), lamb, pork, fish, fresh and frozen fruits and vegetables, and peanuts. The interim final rule for mandatory COOL for fish and shellfish became effective April 5, 2005 and a compliance date of September 30, 2008 was set for all other included commodities. ("Agricultural marketing service," 2009)

In 2008, the Food, Conservation, and Energy Act of 2008 expanded the list of covered commodities to include chicken, goat meat, ginseng, pecans, and macadamia nuts. It also includes provisions for labeling products of multiple origins. The 2008 Farm Bill did not, however, change the implementation date of September 30, 2008. In order to meet the date previously set, on August 1, 2008, the U.S. Department of Agriculture (USDA) published an interim final rule with a request for comments for all covered commodities other than wild and farm-raised fish and shellfish. ("Agricultural marketing service," 2009) On January 12, 2009 the USDA announced details of the final regulation for the mandatory COOL program, and set the effective date of March 16, 2009 for covered commodities. ("USDA issues final," 2009)

The Effect on Food Companies.

Now that the March 16, 2009 effective date has passed, retailers must provide country of origin information and maintain records to verify origin claims, but they cannot do so if they have not received the appropriate information from their vendors. Under pressure from the government to meet COOL mandates, retailers are now demanding their vendors provide *them* with country of origin information – and refusing to do business with vendors who will not. Producers, vendors, and retailers alike can no longer push the matter aside, hoping it will go away. Country of origin labeling is now a requirement, not a choice – a point the government is ready to drive home.

Provisions within the 2008 Farm Bill allow the United States Department of Agriculture (USDA) to "conduct an audit to verify that any person that prepares, stores, handles, or distributes a covered commodity for retail sale is in compliance with the law. Records maintained in the normal course of business which verify origin and method of production declarations, as applicable, are necessary in order to confirm that retailers are provided with credible information on which to base origin and method of production declarations." The law also states that both retailers and suppliers may incur civil penalties of up to \$1000 for each violation. ("Agricultural marketing service," 2009)

But The Industry Continues To Drag Its Feet.

Despite potential consequences associated with non-compliance, the food industry continues to be reluctant to take the appropriate steps to implement an effective method of food product identification (FPI) to meet government mandates. A USDA supply chain "trace back" audit report, released October 29, 2009, showed that only 15% of retailers audited were in full compliance with COOL mandates; the retailers which were not in compliance were not able to provide method of production, failed to submit records within five days, or had an incorrect country of origin. The same report reviewed 2872 retailers and found that 61% of retail stores were not in compliance with COOL (B.Cox, USDA, personal communication, December 7, 2009).

With both consumers and the government pressuring the industry to comply with new COOL requirements, why has the food industry failed to take the necessary actions?

Why COOL and proper FPI is so important

There are an estimated 2.2 million independently owned and operated farms in the United States. ("2007 census of," 2007) Approximately 80 thousand commercial fishing vessels are registered in U.S. alone, landing seafood from all around the world. ("Commercial fishing vessel," 2006) The products from this multitude of originating sources are sold through a food supply chain that is comprised of thousands of importers, processors, distributors and retailers.

At every step along the food supply chain, similar items from many different sources are combined together. Various "primal" and "sub-primal" cuts are created and further processed into other finished goods, such as a porterhouse steak. These finished goods are then passed along the supply chain from vendor to vendor. Non-standardized item codes are then assigned by various vendors to identify the type of product in their inventory system.

Ultimately, the product arrives at a store or supermarket. The current industry practice is to identify most items primarily by species and cut – regardless of the origin. The final result is a nicely wrapped product, for instance, a steak, with a store-assigned stock keeping unit (SKU) code that a consumer can leisurely pick from a cooler in the supermarket.

A Problem Appears.

But what happens if this same steak is found to be tainted in some way? Herein lies the problem. The simple item-based/item code inventory control systems used by most vendors and retailers do not carry enough item-specific information to quickly and efficiently trace contaminated products in the event of a recall. Because there is no true information about the product below the SKU level, the manager of the supermarket that sold the steak would not be able to pinpoint exactly where the product came from. At best, he or she might be able to produce a list of ten suppliers who sold the supermarket the product.

Since items are normally purchased by many different suppliers and are combined together, tracing the product's source can be a very difficult task. In a food recall scenario, authorities from the Food and Drug Administration's (FDA) Food Safety and Inspection Service (FSIS) would have to call each supplier the supermarket purchased the product from and ask where *they* bought the product. Each supplier would have to look up *their* own purchase records (either on a computer, or from a file) only to report that they purchased the same item from ten other suppliers during that time. At this point, 100 potential suppliers would be identified in just two steps. Some food products can be sold four to five times like this, causing an exponential explosion of information and potential sources of origination that could take days to investigate. ("FSIS Food Recalls," 2006)

A Recall is Initiated.

Once investigators at FSIS find and notify potential sources of the contamination, a recall will be undertaken by the suppliers. Now, suppliers must begin working their way back up the supply chain to find out who else might have bought the same items that were identified as being contaminated. What they will most likely discover is that one supplier sold the recalled item to 20-50 other companies over the course of a day – with each of those companies passing it along to other supermarkets. ("FSIS Food Recalls," 2006)

Once again, the combination of potentially affected customers quickly escalates and hundreds of potential supply chain routes quickly surface. Faced with overwhelming potential infection routes and huge potential liability, suppliers make a decision: it is simply faster and safer to err on the side of caution and declare a "blanket" recall of *all* such items in the food chain. The media warns consumers to avoid eating the tainted

product until further notice. In the process, millions of dollars of perfectly good meat is needlessly thrown away to ensure the few contaminated pieces are not consumed.

The economic repercussions associated with a widespread recall can be severe. In May 2003, scientists announced that a case of bovine spongiform encephalopathy (BSE), also known as mad cow disease, had been discovered in Canada. In response, the U.S. and other major beef markets, including Japan and South Korea, banned the import of cattle, beef, beef –based products, and animal feed from Canada. During the ban, the inability to export beef products led to a dramatic drop in the prices producers were paid for beef, resulting in losses of \$7 million dollars a day, with lost exports totaling nearly \$11 million a day. (Forge & Frechette, 2005)

In December 2003, a cow infected with bovine spongiform encephalopathy (BSE) was discovered in Washington State. Four hundred fifty bull calves were destroyed because USDA officials could not determine which one of the calves was the offspring of the cow that had tested positive for BSE. (Wolk, 2004) Some 70 countries, including Canada and Mexico, imposed import bans of varying degrees on U.S. beef and cattle, causing U.S. beef exports to drop from a record 2.5 pounds in 2003 to 461 million in 2004 – a decrease of over 80 percent. (Blayney, Dyck, & Harvey, 2006). The International Trade Commission estimates trade restrictions cost between \$1.5 and \$2.7 billion in annual revenue between 2004 and 2007. (International Trade Commission [ITC], 2008).

Understanding the Solution

Why can't contaminated food be traced quickly and precisely?

The answer is simple: items of the same type (similar item codes) – but *from different sources* – are often mixed together in the food industry, meaning that only a large *group* of potential suppliers (and subsequent purchasers) can be identified if a product is deemed contaminated. The sheer volume of information associated with tracing a contaminated product up and down the supply chain makes an audit of any kind nearly impossible.

The industry practice of identifying and labeling food products by like kinds of items and cuts using only item codes is archaic and ineffective. Today's complex global economy and charged political climate demand an identification system which provides more detailed item information so that in the event of a food recall, or worse, an act of bioterrorism, items can quickly be traced up and down the food supply chain.

The Current State of the Industry.

Adopting a new, more modern and comprehensive means of FPI is not an easy endeavor. Suppliers are hesitant to stray from time-tested practices, even though they have no other alternative but to do so. In the fast paced food industry, suppliers must get perishable items to market as quickly as possible; otherwise, they will spoil and become worthless. To accomplish this, suppliers have relied on established work routines that are able get a steak or a cut of fish to the local supermarket in lightening speed – sometimes in a matter of hours. Transitioning from an item based/item code inventory control system to a more item specific system involves change and risk for suppliers. Time honored practices are well entrenched in the industry – and altering them is fraught with difficulty for a variety of reasons:

Plant Floor Practices – Suppliers rely on time proven procedures to make sure perishable products get to market quickly. Most suppliers have always separated products on their plant floor based only on species; where the product came from, or other "item attributes", was never critical to them. As a result, like kinds of items from different locations are stored together and mixed up. Once this happens it is impossible to know where a particular item came from. Changing to another physical inventory practice (one which they have not even learned yet) represents risk and cost, and generates apprehension.

Combining Products in a Process – Much of the food industry is comprised of food processors – companies who either take multiple products and make one new product (i.e. mixed vegetables), or who take one large product and make multiple individual products from it (for instance, cattle become steaks and hamburger). These processors are constantly combining like item codes from different suppliers when

they make a large production run. Without specialized procedures to track those internal work order processes, labeling and tracing of the end product can be a nightmare.

Inadequate Computer Software – The U.S. food industry is fragmented, and includes a large number of small companies. Many of these companies use simple, off-the-shelf accounting systems to try to control their inventory. However, most of these systems are only designed to handle inventory at the item code level. They are not designed to handle the additional information needed about the individual inventory items they track. Seldom do they have the ability to pass this additional information along to the next vendor in the chain, either electronically or by printing the additional information on the appropriate paperwork.

Item Code Explosion – Early attempts to solve the problem of tracking the origin of seafood products were to simply add more item codes to account for different "item attributes" of like products – one code for *Canadian* salmon and a different code for *U.S.* salmon, for example. However, many other attributes need to be tracked in order to comply with the new COOL law, such as where the food was processed, and whether it was wild-caught or farmed. Doing so requires one new set of codes for each variable being tracked. Simple systems that were designed to have one code per item (species) and handle a few hundred item codes can quickly become overwhelmed – referred to as "item code explosion". By adding item codes in order to track various item attributes necessary for COOL, a list of 100 items can quickly multiply to over 1,000 codes! Code explosion causes costly problems entering, picking, and shipping the product, expensive delays, and loss of business.

Product Labeling – The new law requires that certain retailers, like major supermarkets, must provide correct labeling for the products they sell, but retailers cannot label products correctly if the information is not being tracked along the supply chain and is not available to them. In addition, retailers do not *want* to inventory multiple like products at the country of origin level, since doing so requires more space. To add to the problem, most computer systems currently used by retailers are not capable of handling multiple variations of the same species item code any more than their suppliers are.

To change behaviors and still remain competitive is a big challenge for any industry. This is especially so for the food industry, which, up until recently, has almost entirely used an item based inventory control system. Now, forced to turn away from deeply engrained and established practices, many members of the industry are unsure of how to proceed. They are afraid of the unknown and are afraid how much a plausible solution may cost them. They do not know what procedures, systems, and practices they will have to implement in order to comply with COOL requirements in a cost effective manner. Essentially, the industry is at a loss for what to do next.

How Do We Fix The Problem?

The item code needs help.

At the center of most inventory systems is an item record. Each item in inventory is given a unique item code to identify it in the supplier's system. Item codes, which are generally between six and 12 digits long, identify many different items that flow in and out of the system on a transaction line. For instance, the item code "10021002" might represent the item record for "salmon fillets." In simple, off-the-shelf software systems, everything about an item is recorded on this item record – its name, color, package size, notes, etc. This type of system is referred to as a "line-item based" system. As the items are sold they are removed from inventory. Various methods of coding have evolved, but the key point is that most of the food industry uses simple, line-item based inventory systems to track all the information for an item.

As explained previously, problems arise when the same product code is obtained from (or processed in) multiple locations (i.e., tomatoes from ten different vendors and/or countries). When this occurs, the item code needs to incorporate more information (attributes) about the specific item being sold, not just about the descriptive name of the item. To track additional, *differing* attributes about the same type of item, companies must change their floor practices and software systems to better comply with the new laws.

The solution – a lotted inventory system

The answer to the entire problem of FPI lies in implementing what is called a "lotted" approach to inventory control. A "lot" is a physical batch of items with the same basic attributes. For example, when a load of salmon arrives from one fishing vessel that was fishing in Canadian waters, it is tracked and physically kept in separate lots from the salmon landed by a different fishing vessel that was fishing in U.S waters. Or, for instance, apples that are received from one supplier are segregated from apples received from another supplier. These lots are then assigned individual identification numbers, and additional attributes about that specific lot can be recorded at the lot level.

In a lotted inventory system, lots are recorded as separate records, many of which can then be associated to the same item code (many records to one record). In this way, one item code – for instance, salmon fillets – could have a number of different lot records associated with it. This lot record can relay important information about other attributes, such as each lot's origin, where it was processed, grade, size, date of harvest or purchase, landing ports, etc.

It may sound simple, but implementing a lotted inventory system in a company that was not previously lotbased requires many changes in the way product is handled on the plant floor. Training employees to treat each lot as distinctly different inventory requires time and a cooperative nature to change behaviors. The physical layout and space requirements of the plant are increased. Work flows are modified.

Can Business Handle the Change?

It's a challenging process, especially for small businesses, which generally have less floor space, fewer financial resources, and a smaller number of employees. These small businesses are the least equipped to make changes that are necessary to comply with the COOL law, and yet they make up the largest segment of the U.S. economy.

- In 2006, roughly 80% of U.S. companies had twenty or less employees; 10% had fewer than ten employees. ("Number of firms," 2007)
- Recent data from the U.S. Bureau of Labor Statistics states that nearly 60 percent of agriculture, forestry, and fishing establishments employ fewer than four employees. ("Agriculture, forestry, and," 2007)
- The 2007 Census of Agriculture found that 91 percent of all farms are small farms farms that sell less than \$250, 000 in agricultural products annually, with a whopping 60 percent of all farms reporting less than \$10, 000 in sales of agricultural products. ("2007 census of," 2008)

Because the food industry is comprised mainly of small businesses, it is burdened the greatest by the new mandates, and yet it is the least capable of making the necessary changes to be in compliance. It's no wonder the food industry has been slow to implement COOL requirements!

Electronic Systems Are Needed.

Though changing the floor operations of a company is a first step toward COOL compliance, it does not help solve the traceability problem if the information cannot be passed along the supply chain quickly and easily. This problem usually falls on the company's computer system. To handle lots correctly, and also have their attributes appear correctly on all of the associated transaction paperwork and product labels, the very core of the software would need to have been designed with lots in mind.

If the product being sold and shipped is lotted correctly – both in the physical plant and the computer system – the additional information about those lots can now be conveyed between vendors and ultimately be received by the supermarket/retailer. The supermarket can now receive one item code (SKU), along with additional information about the lot(s) for the item that was shipped. This results in the ability to trace item lots back to their origin, or pass along origin (or other) information about the specific items being shipped to the retailers.

The receiving party (a supermarket, for instance) can receive and store the lot information however it wants. This could happen as an electronic exchange between computers, (as long as both systems provide

for lotted records) or it can be done manually by just maintaining the shipping papers and invoices which now have the lot information displayed on them under the item description.

Having a lotted inventory system is the first requirement necessary to comply with the 2008 Farm Bill, but in order to trace diseases which may take days or weeks to appear, suppliers must also use a "perpetual inventory system." Perpetual inventory systems keep information about inventory in the system longer than the product is kept on the shelf – how long this information needs to be kept depends on the selling and use cycle of a specific product. A perpetual inventory system allows for traceability days or weeks after a problem is discovered. By maintaining the inventory lot information for a period of time beyond when the product is actually sold, the information remains available, should it need to be traced as part of a recall. While a perpetual inventory system can be accomplished without a computer, computerized systems are able to retrieve lot information the fastest, when time is of the essence.

The additional information about lots, available through a perpetual inventory control system, solves both the traceability and labeling problem in food products. It also makes a recall of contaminated product much faster and much more efficient. As soon as a recall is implemented, authorities can begin their investigation, armed with the item's lot numbers and attributes. This information is needed to trace the item down the supply chain, from vendor to vendor, in order to find the original problem lot or lots.

Using lot information, the manager of the supermarket where a recalled item was sold can now look up purchase receipts, either on the computer or on paper, and know exactly which vendor the item came from, and which lots comprise the shipment. When the vendor who sold the supermarket the tainted item is contacted, the vendor can then relay where he or she purchased the item, because the vendor's products are also identified by separate lots.

This process continues back to the origination point or point of contamination of a specific lot. Once the origination point is known, the process is reversed. The suppliers can now look back up the supply chain to see which customers received product from those specific lots, and who passed them up along the chain to the retailers. (This process works even when one product is processed into other products, although this usually creates a larger scope associated with the recall.) In this way, the recall can quickly be isolated to certain threads of the supply chain, instead of a blanket recall and consumers can now be told to avoid the food from very targeted locations.

With the lot number (or some other production code) printed on the final product labeling, the consumer would instantly know whether or not a recall affects the product they purchased, based on the warning information issued about that lot code. Instead of recalling our entire nation's supply of tomatoes for instance, a fast review of the vendor chain would allow the contaminated product to be followed through the supply chain – so that only food within the certain lots or code designation distributed by affected suppliers could be recalled.

Actual experience in the seafood sector

When the 2002 Farm Bill was first introduced the attitude of the majority of companies was "I'll start complying when I see fines being levied." Most took no action, feeling that the problem was so complex it would be scrapped over time, but when lawmakers held fast to the rules and when the first set of fines were imposed on some large retailers, those retailers got the message. These retailers then made sure *their* suppliers down the chain complied with COOL requirements – or at least they thought they did.

Many suppliers began to give the *appearance* of compliance. This apparent compliance ranged in magnitude. Some suppliers simply faked data or provided labels outside of their inventory system (i.e. produced by hand); some tried to make their existing software systems indicate country of origin information on invoices by using various data fields meant for notes and comments. Others tried to comply by adding new item codes, which started them down the slippery slope to "code explosion."

Other companies did take the rules to heart, and began working with their software providers on ways to make the system work to effectively deal with country of origin information. These companies wanted to

hang onto the business from their customers, but did not have the tools in place to offer anything but the appearance of compliance. They had also not yet accepted that the item code – the very core of their business – was incapable of conveying country of origin information.

Some inventory systems are beginning to catch on, and some off-the-shelf systems have begun to try "bolting on" lotting routines to deal with COOL regulations. However, because the core programs were not built around lot control, adding lotting capability sometimes leads to software inadequacies, user frustrations, and additional cost in implementation.

One of the first companies to address the issue of country of origin labeling was Cape Cod Shellfish, a Boston-based seafood supplier. Like other suppliers, general manager John Pezzone, wondered what the 2002 Farm Bill would mean for his company. Although Pezzone was concerned about cost, he was more worried about the extra work that would be involved in meeting the new COOL requirements. "I was a little overwhelmed at first," says Pezzone.

Item Code 'Explosion'.

In order to comply with COOL mandates, Pezzone first began to physically segregate items into lots on the plant floor, manually assigning different item codes to record lot attributes for each physical lot – a task which took hours to accomplish. "At first it was a lot of work...I had two, three, four item codes for the same item, which was a problem."

Frustrated by "code explosion," Pezzone decided to implement a perpetually-lotted inventory system using Net•Yield[™] weight based inventory control software. By using an internal, perpetually-lotted inventory system, Pezzone can now define lot attributes once, eliminating the need to manually enter multiple item codes for the same product. Once lot information is entered for an item, it can automatically be added to all appropriate paperwork and product labels, providing lot control, country of origin labeling, and traceability up and down the supply chain. "What used to take me two to three hours to complete now takes me five to ten minutes," explains Pezzone. "It's easier to do it [country of origin labeling] right, than not doing it."

The complaint of "I'd have to buy an expensive computer system" does not need to be an issue for those wanting to get into the business of supplying safe and recognizable food to our nation's consumers. Affordable software that can provide COOL and traceability is available. For those companies who already do have computer systems, the problem of technology costs is usually centered on one of two issues: the software requires a vendor to upgrade or modify an existing operating system or purchase a lotted inventory system.

Conclusion

The real problem with implementing COOL is simply a fear of the unknown. Suppliers are afraid to comply because they understand neither the information technology nor the plant practices that are needed to solve the problem. Their big objection to greater food product identification usage is cost – the industry fears that complying with COOL will be expensive and place them at a competitive disadvantage. However, the traceability needed to allow pinpoint food recalls *can* be affordably implemented and administered – if the food industry understands the real problem of food product identification below the SKU level, and if the playing field is made level for all suppliers via national laws.

Proper food product identification means that recalls can be done quickly, and can be tightly constrained through the supply chain in order to minimize disruption to the entire market. Blanket recalls that affect and waste billions of dollars of perfectly good products can be avoided. And the consumer can get what they are clamoring for – product labels that indicate the correct country of origin of their food.

There is no doubt that implementing a lotted inventory system will necessitate change. Moving away from an item code-based system will require many suppliers to change the way they store and process information. Floor operations will need to be modified. Retraining of employees will need to be done. Space requirements and work flow will need to be rethought.

Computers will be a necessary part of COOL compliance. Although it is hard to imagine a company handling items in this day and age without the assistance of a computer, this is sometimes the case, especially with smaller companies. In the seafood industry, some companies are still keeping their inventory on a yellow pad of paper or a "white board". Information about specific product lot origin will never be available up the chain if it is never recorded in the first place; and, if computers are not used to manage this complex information, the time required to trace the product could be deadly should a recall occur.

In closing, we offer the following conclusions:

- We simply cannot accomplish the goals of providing country of origin and bioterrorism traceability by using today's simple, item-based inventory control systems. A "smart item code" containing lot attributes is needed to meet both objectives.
- Many companies will be forced to change the way they handle their inventory and floor processes in order to implement and maintain a lotted inventory system. Lot integrity needs to be maintained if the supplier is to be in compliance with the laws so that a fast, auditable trace can be implemented back to the product's origin. For the most part, these changes can be done quickly and affordably.
- The technology needed to provide a lotted product ID or SKU code that contains other item attributes, such as lot information, is achievable. Although many software systems will need to be changed to accommodate lotting characteristics, software manufacturers can make these changes if their customers demand it. To be sure, there are other problems that affect FPI, such as the ability to physically attach labels to all kinds of food products, and rapidly scan items during shipping or receiving. However, until the industry understands and adopts lotted, perpetual inventory systems, these other issues will be peripheral.
- Food chain suppliers must be taught to recognize the roots of the product ID problem and understand that there are answers that are available to them. The old practices of relying on itembased codes must be supplanted by lotted inventory systems and practices so that specific lot attributes, such as country of origin, can be conveyed, either electronically between computer

systems or printed on transaction paperwork. In short, suppliers *must* maintain a lotted, perpetual inventory system so that their products that can be quickly audited should the need arise.

- The rules of the 2002 and 2008 Farm Bill must be implemented across the board and strictly adhered to in order to create a level playing field for *all supply chain businesses*. The market simply will not move in this direction by itself; only a congressional mandate will ensure an equitable timeframe and common rules that all market participants can follow.
- The real reason most companies are resistant to change is simply a fear of the unknown a belief that the costs of change will be prohibitive, placing them at a competitive disadvantage. Proper food product information is possible it *can* work and has been successfully implemented by both small and large companies within the seafood market.

It is a misconception that achieving these goals is a costly proposition. Additional protection gained from safeguarding our nation's food supply is well worth the cost – one this country cannot afford to do without.

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