

**E. COLI
ALERT**

FSMA 7 YEARS LATER: IS IT ENOUGH?

Even after the introduction of the historic Food Safety Modernization Act in 2011, food recalls continue to wreak havoc on the food supply chain. Experts weigh-in on the law's effectiveness and offer solutions for America's food safety problem.

In 2006, spinach contaminated with E. coli from a California farm led to the deaths of three people and sickened nearly 200 more. As a result, public interest in how food safely moves from field to fork grew, leading President Barack Obama to sign the Food Safety

Modernization Act (FSMA) into law in 2011.

Now, nearly a decade later, regulatory compliance and food safety remain a top concern for the food logistics sector, and rightfully so, given the recent fatal outbreak of E. coli involving romaine lettuce. The April outbreak, which killed five people and sickened more than 200, was the largest E. coli flare up in 12 years when tainted spinach prompted legislative action.

The cause of the romaine lettuce outbreak, however, came as no

surprise to David Bernkopf, vice president and food industry advisor for SafetyChain Software, who acknowledges certain aspects of FSMA remain problematic. Samples of canal water in the Yuma, Arizona area were found to contain the same genetic strain of E. coli that caused the outbreak, according to a statement released by Dr. Scott Gottlieb, commissioner of the federal Food and Drug Administration (FDA).

"It was no surprise to anybody that water has been implicated very specifically as the source of the contamination," Bernkopf says. "If you look at FSMA, one of the things they are waiting to address is what they think about water quality and usage with produce, and that is an important element. What that really addresses is: What is the science and economics around that?"

And while FSMA was an important step toward creating a safer food supply chain—in fact, up until the 2006 event, there were no federal regulations at all requiring growers to test the quality of the water used on produce—regulations can only do so much.

First of all, produce in itself is at a disadvantage, explains Bernkopf.

"Not all food safety risks are the same," he notes. "We have preventive controls, but produce doesn't have an intervention where if there is actually something wrong we can destroy a pathogen or eliminate a food safety event. In absolute terms, can we protect the supply chain that is leafy greens and produce? I think the answer is pretty clear, and the science isn't there."

"Are we going to grow all of our

“Food safety and quality assurance demands are ever increasing. Technology is the best answer in managing that going forward.”

David Bernkopf, VP and food industry advisor, SafetyChain

produce in potable water (water that is safe to drink or to use in food preparation)? I don't think so. So what's a better solution?" he asks.

Unfortunately, he doesn't have the answer, though he believes there could be a compromise.

"It's about prevention or finding a satisfactory intervention that the consuming public accepts. And we're not there yet," he says. "There will always be some risk associated with produce as the science stands today. The key is going to be a lot of discussion about water and its safety and use in produce."

So what can we do right now? Bernkopf says the industry must a) keep better records and b) look to technology.

"The more that we can take advantage of technology in the space, the better we will all be. It will improve the industry dramatically," he says. "We need to get rid of the pen, paper and clipboard forever, because as we move forward, that transparency of information is going to be more and more critical.

Food safety and quality assurance demands are ever increasing, and technology is the best answer in managing that going forward."

Local Doesn't Mean Safer

Bernkopf's viewpoint seems even riskier when you consider today's ever-growing farm-to-table trend.

"The millennial generation is driving, to a greater extent than any other generation, this idea of buying food locally," explains Randy Fields, chairman and CEO of Repositrak.

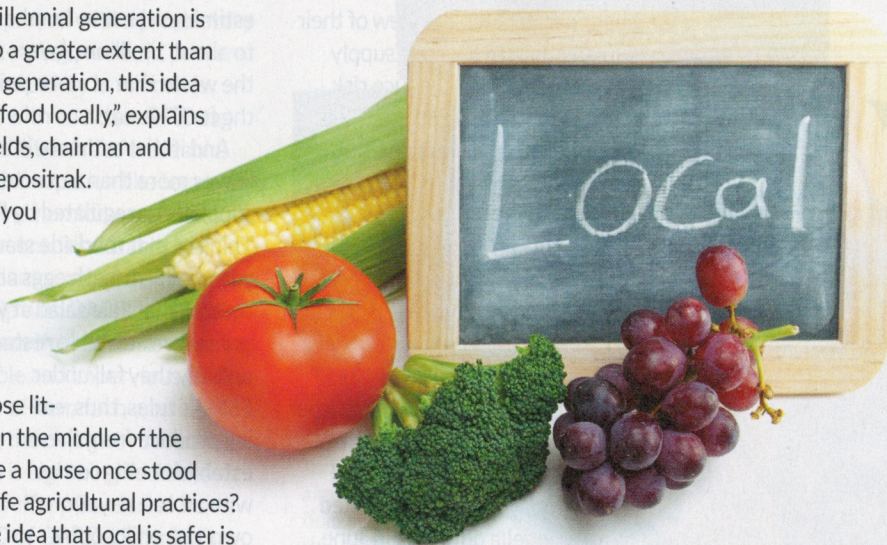
"Suppose you lived in Detroit.

You actually think that one of those little farms in the middle of the city where a house once stood follows safe agricultural practices?

"So, the idea that local is safer is absurd," Fields adds. "As localization

explodes on the scene, expect outbreaks to increase, not decrease, because the number of vendors is increasing, while the controls are decreasing over those guys. So, this isn't going to get better, it's going to get worse."

The industry veteran's outlook on the current state of food safety



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“The consuming public wants 100 percent safe food... but both the science and economics don't allow it to work.”

David Bernkopf, vice president and food industry advisor, SafetyChain

➔ Kellogg's cereal brand Honey Smacks was among the dozens of food products recalled this summer.



in the United States may seem grim, but it's the everyday reality at his company, which was originally founded to address the expected rise in regulatory requirements associated with FSMA. Today, Reposittrak provides a compliance and commerce solution that offers customers a complete view of their supplier data to improve supply chain efficiency and reduce risk.

"I can help you decide that this guy follows good practices, this guy's well rated, this guy is insured, all of those things. Absolutely true. But, what I can't do is guarantee that that guy isn't going to have an accident," Fields says.

Following that logic, he categorizes outbreaks in two ways: one caused by an accident and the other due to poor food safety practices.

For example, Kellogg's cereal brand Honey Smack's was linked to a salmonella outbreak in June, which at press time had infected 100 people in 33 states.

"Nobody on planet Earth would say, 'What a terrible company that is.' It's not true; they're great, and they follow excellent practice, but mistakes happen," Fields explains.

However, he notes that can't always be said for the small guy. "Tom's tomatoes, the guy down the street, I can't say anything about his practices. He doesn't follow good practice. So, in a way, you're saying,

'If he kills somebody, it's because he doesn't follow good practices. It wasn't an accident. And it wasn't deliberate, but it was predictable. It was just a matter of when it would happen.'"

If you stay with good players that are documented and follow good practices, Fields adds, your risk is lower—but he emphasizes, it's still not zero.

The Problem with Exemptions

In addition to the uncertainties created by hyper-localization, the sheer number of suppliers in the food supply chain is a problem in itself. According to the FDA, there are about 200,000 registered facilities in the food supply chain, but that doesn't include farms or those not registered with the FDA. Fields estimates the true number is closer to about 1 million players around the world that at some point touch the food we eat.

And if that estimate is true, that leaves more than a quarter million suppliers unregulated by FSMA. Think of that roadside stand where you buy farm fresh eggs and tomatoes, or that kale salad at your favorite farm-to-table restaurant. It's unlikely they fall under FSMA's rules, thus, eating produce from these establishments comes with an eat-at-your-own-risk philosophy.

"Localization is socially driven, and I don't know how you control that except to put the truth out there. And that's very difficult," Fields notes.

And this is not to make light of the FSMA rules, which Fields does in fact believe addresses many of the United States' current food safety challenges, but he says the "exemption holes are too large, and the risk is primarily with the people who are exempt."

Currently, FSMA only requires very large farms, rather than all farms, to sample and test the water used to grow and clean produce, and no farms are required to report their data to the FDA until next year. Fields equates this to very questionable gun control.

"What if we had gun control laws that said, 'If you have no criminal record whatsoever, you may not own a gun. If you have a criminal record, have at it?' Well, that's what we're doing in food safety. What we're saying is, 'If you're one of the

little guys, because it might cost you a few dollars to be safe, you don't have to be safe. You can be anything you want to be.' I'm increasingly of the opinion that that's at the heart of what's going to be the problem going forward."

While Bernkopf agrees, he is also aware of FSMA's dilemma between best practices and best science.

"The exemptions to the smaller companies and smaller growers are really at odds with the regulations and the science. Should it be addressed? The answer is yes. Ultimately, in my opinion, it should be all-encompassing. But at the same time, it's also a burden on them," he notes.

So how do we keep our food safe without putting small farms out of business? Bernkopf says it's again going to come down to compromise.

"The consuming public wants 100-percent safe food, and I don't blame them, but the circumstances around produce in particular, both the science and economics, don't allow it to work," he concludes.

In the end, however, the rules may be written by the retailers. We are now seeing pressure from the industry's largest supermarkets

who are not willing to take a risk on a supplier even if they claim to be exempt.

"We're seeing more and more that the people who are in the most control of the supply chain, who are the retailers and wholesalers, are beginning to require that everybody conform to a high standard," says Fields. "In theory, if you do less than \$500,000 a year of business, you're exempt from FSMA, if you're a manufacturer or supplier. So now you try to say to your retail customer to whom you sell, 'Hey, I'm exempt, I don't have to do anything.' Well, how does the retailer know that you're telling them the truth? And does he want to take the risk that you're really exempt? They don't do that. So, we're finding more

“The exemption holes are too large, and the risk is primarily with the people who are exempt.”

Randy Fields, chairman and CEO, Reposittrak

and more people in the supply chain saying, 'Look, I don't know if you're exempt or you're not exempt, but this is what you're going to do if you want to supply me.'"

Taking Preventive Measures

Only time will tell if FSMA can control America's food safety woes, but until then, recalls, unfortunately, are still a fact of life. With an average price tag of more than \$10 million (and that doesn't include costs associated with brand damage or lost sales), that kind of financial hit is insurmountable for many companies. As a result, many are taking food safety into their own hands, demanding visibility into every aspect of their supply chain.

There are a number of platforms available to ensure compliance and provide access to greater supply chain traceability, including those offered by SafetyChain and Repositrak, but connected assets and sensors are also driving a lot of excitement in the area of preven-

tion. Even the seemingly simple pallet is taking a greater role in ensuring proper food safety, an area we have not seen a lot of progress until now. Lightning Technologies, based in Oxford, Michigan, hopes to disrupt how the industry views food safety in regards to pallets with its innovative hybrid "smart" pallet.

In fact, Lightning's pallet, which is made from specially engineered plywood sprayed with a proprietary polyurea coating, was built primarily with food safety in mind. It is imbedded with an active RFID tag that makes it track and traceable, providing information like temperature and humidity and shock and movement. It's durable and fire-retardant coating, developed in partnership with BASF, completely encapsulates the pallet, also making it sanitizable and impervious to the harborage of harmful bacteria.

Leading the charge in this pallet revolution is Lightning Technologies' CEO Jeffery Owen and Rex Lowe, CEO of GARD, Lightning's exclusive pooling partner and



Lightning Technologies aims to revolutionize how we ship food, with its "smart" pallet.

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“We don’t know in every case [of a recall] if a pallet is involved, but now we have the ability to track it.”

Jeffery Owen, CEO, Lightning Technologies

sales force. The duo has a long working relationship, with Owen manufacturing plastic pallets for Lowe’s former company, iGPS. Lowe founded iGPS, the first all-plastic pallet pool, following many years with the world’s oldest wood pallet manufacturer CHEP.

“I wanted to do a plastic pallet. I was sick of wood; it was causing all kinds of problems that I couldn’t fix,” he recalls. “But after about eight years, I started thinking there’s also issues with the traditional plastic pallet. They’re very expensive to make. They’re very slippery when wet. There’s fire-related issues with them. If they’re not metal-reinforced, they’re pretty weak and flimsy. They don’t particularly do well in extreme cold or extreme hot. And so, in my search to find something that was even better than the plastic pallet, Jeffery and I ran across each other again.”

Both Owen and Lowe were drawn to the challenges the produce industry, specifically, faces in regards to food safety.

“We’re excited that it’s really going to make a difference, and I really think that we are going to push other people to be better,” Owen says. “Everyone got lethargic with the wood pallet...but Rex is willing to be the gorilla in the room.

“We are prepared to go to the

market specifically for protein, produce, pharmaceuticals and electronics, and I think the big stores will appreciate it,” he adds.

It’s impossible to identify the percentage of food recalls related to pallets, but Lowe says it’s reasonable to assume they are part of the problem.

“It would stand to reason when you track a load from where its grown, all the way to where its delivered, that the pallet would play a role in either keeping it safe or messing it up, because everything moves from a pallet,” he explains. “For 100 years there’s been no other choice for anybody to ship on. So, they keep the product boxed as best they can to keep it from touching the pallet, but mistakes happen. And of all the recalls, and there’s some every month, you have to believe that at least half of them are due to the pallet, because that’s the touch point. Every piece of lettuce that you consume, at one point, was sitting on a pallet.”

And while there is no hard evidence to back that claim up, Lowe notes that eliminating the pallet as a variable in a potential food recall can help narrow down the culprit.

For example, Lowe says, if the contaminated romaine lettuce in the Yuma outbreak had been carried on a Lightning pallet, they would have been able to say, ‘This was the unit that it happened with, here’s the number of the pallet, this is where the load was delivered from,’ and maybe only part of Yuma

would have been shut down instead of all of it.”

Owen adds: “We don’t know in every case [of a recall] if a pallet is involved, but now we have the ability to track it.”

Lowe also points out that they can pull up individual pallet data to provide up to a five-year history of everything the pallet has carried.

“RFID and the ability of our pallet to be completely encapsulated shows a whole different level of food safety that globally is going to impact how logistics are looked at for food,” Owen says. “Whether we start a trend, which I think we will, people will start looking at how best they can bring a solution to the table—whether it’s RFID tracking systems or some kind of new technology that’s pending. We’re working on so many technologies that we don’t want to go too far with the RFID because it might be outdated in the next year.”

The next big advancement in RFID technology may even be available as soon as 2019, Lowe notes, adding they are currently working with a think tank to develop an RFID tag that could detect within a certain range of cubic feet whether produce has any kind of E.coli, salmonella or listeria on it.

That could be game-changing. “Nobody would get sick; the shipper just wouldn’t sell it,” he explains.

Repositrak’s Fields, however, is less worried about the buzz around track-and-trace capabilities. The key to food safety in his opinion is around prevention.

“The food industry is extraordinarily good when there’s the report of a problem, of getting it off the shelf,” he explains. “Now, the truth is, though, by the time somebody knows it happened, most of it’s been eaten. So, an ounce of prevention is worth a pound of cure. We’re putting the emphasis on the wrong syllable. Let’s just make sure that good players are in the system...and if good players are in the system, you will reduce, systemically, the number of outbreaks.” **FL**

TOP THREE REASONS FOR **FOOD RECALLS**

① **UNDECLARED ALLERGENS**

continue to be the major cause for pulling products from store shelves. In 2017, there were 218 products affected. The top allergens that find their way into processed foods are milk, egg and soy, and cross contamination only worsens the problem.

218
RECALLS
in 2017

② **MICROBIOLOGICAL CONTAMINATION**

accounted for 146 recalls in 2017. Listeria was found in cheese, salmonella was found in many product categories from chips to candy, and E. coli was found in beef.

146
RECALLS
in 2017

③ **FOREIGN MATERIAL CONTAMINATION**

accounted for 42 recalls in 2017, including metal, hard plastic and glass.

42
RECALLS
in 2017