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Perspective
The spinach fallout: Restoring trust in California produce

THE E. COLI OUTBREAK DEMONSTRATES WHY AMERICA'S FOOD SAFETY SYSTEM NEEDS AN OVERHAUL

By Marion Nestle

In the produce section of an upstate New York supermarket last week, a prominent sign boldly stated, ``Spinach is back! The spinach we currently offer is grown in Colorado and Canada.''

The sign announced to customers that spinach from Colorado and Canada is safe to eat. The clear message was that spinach from California is not. In fact, the store has not carried any since mid-September when the FDA first warned the public not to eat fresh spinach because of an outbreak of the particularly nasty form of *E. coli* known as 0157:H7.

Since mid-August, federal agencies have logged 199 cases of illness, including 102 hospitalizations and three deaths, caused by eating raw spinach grown and bagged in California and somehow contaminated with *E. coli* 0157:H7. With lawsuits filed and plenty of blame to go around, stores are reluctant to carry any California spinach, even that grown beyond the two Salinas Valley counties -- Monterey and San Benito -- currently under investigation.

The recent outbreak of *E. coli* 0157:H7, which was traced to spinach grown on a farm in the Salinas Valley, illustrates why our food safety system needs a major overhaul. This month, Sen. Richard Durbin, D-Ill. and Rep. Rosa DeLauro, D-Conn., introduced a bill to unify federal food safety oversight under a single agency. Passage of this legislation is critical to the future of California agriculture.

The *E. coli* outbreak is a disaster, not only for the victims who were infected, but for everyone who has a stake in California agriculture-growers, farmworkers, truckers, packer and those of us who want plenty of vegetables in our diet. But the fervent promises by Salinas Valley growers to institute standard food safety procedures are coming too late and are simply not enough.

For anyone who tracks the arcane politics of food safety in the United States, this outbreak was entirely predictable. Since 1998, the Food and Drug Administration has repeatedly warned producers of fresh fruit and vegetables about the dangers of *E. coli* 0157:H7 and the need for measures to keep potential sources of these bacteria well away from their crops.

In 2004, the FDA issued a plan for preventive steps that it fully expected vegetable producers to follow. But last year the agency complained that its long efforts to engage the lettuce industry ``have not yet resulted in a comprehensive, collaborative plan to address the issue of *E. coli* 0157:H7.'' The FDA then warned growers to get busy and fix the problem.

This August -- too late to prevent the current outbreak -- the agency extended this warning to spinach producers. The futility of the FDA's increasingly urgent pleas reflects the huge gaps in the nation's century-old and highly dysfunctional food safety system.

Oversight in this area is shared largely between two agencies, the USDA for food animals and the FDA for food plants. Neither has much jurisdiction over farms. The FDA in particular has little enforcement authority. It can do little more than issue warnings and ask for voluntary recalls and action plans.

How many people have to be sickened or die, and how many crops and livelihoods have to be destroyed, before it becomes obvious that voluntary is not good enough? If ever a situation called for a unified farm-to-table food safety system-with real regulations, inspections, and enforcement -- the recent *E. coli* outbreak is it.

The lethality of the 0157:H7 variant of *E. coli,* an otherwise benign inhabitant of the intestinal tracts of humans and animals, is reason enough to require action. The first case of human illness associated with this strain was reported in 1975, and the first outbreak occurred in 1982. This variant has several especially troublesome features. It survives heat, drying, and acid conditions better than garden variety *E. coli,* and causes infection at very low doses. This means that control measures must do more than just prevent the growth of these bacteria. Measures must either kill all of the bacteria or completely prevent them from getting into food in the first place.

Until recently, raw or rare hamburger was the most important origin of *E. coli* 0157:H7 outbreaks, but no more. According to the Center for Science in the Public Interest, a watchdog group, contaminated produce is now responsible for more cases of illness than any other food category.

Hamburger is a problem because the ultimate source of *E. coli* 0157:H7 is invariably untreated animal waste from an infected farm animal. Federal investigators have now traced the source of the recent spinach *E. coli* 0157:H7 to animals on a single farm. How the bacteria got from manure on that farm to the spinach is not yet known. Although wild animals and farm workers are possible

sources, the most likely possibility is transmission through ground water that carried the bacteria from a source of untreated manure to the growing fields.

Also uncertain is why the bacteria failed to be washed away in the packing plant run by Natural Solution Foods in San Juan Bautista. The spinach was processed through this plant's highly regarded, state-of-the-art, triple-washing procedures. No breaches in procedures have been identified, which means that washing apparently is insufficient to remove *E. coli* 0157:H7. This only serves to reinforce the importance of making sure the bacteria do not get on spinach leaves in the first place. While the investigations continue, the recent outbreak has taught us some important lessons.

Lesson 1: Prevention is essential; treatment is too late: The first case of illness associated with bagged spinach occurred on Aug. 19, and half the illnesses began before Labor Day, but government health officials did not hear about them until Sept. 13. On Sept. 14, when the FDA issued warnings and asked for recalls, 85 percent of the illnesses had already happened. It takes a minimum of two weeks from the time people become ill and go to a doctor before test results can be received and reported to health authorities. By then, any warnings or recalls come too late to protect public health.

Lesson 2: Don't blame organics this time: Within minutes of the FDA's spinach warning, proponents of industrial agriculture were blaming the outbreak on manure-based fertilizers used in organic production. Yes, the contaminated spinach was packed at a plant that also bags organic produce, but the infected product was industrial spinach, conventionally grown.

Organic growers are required to follow strict rules for heating manure to a temperature high enough to kill any harmful bacteria and for storing treated manure until it is safe to use on vegetable crops. They are inspected to make sure they follow those rules. In contrast, conventional crops are not subject to any regulations on the use of manure.

Lesson 3: Industrial agriculture has its down side: The spinach outbreak points to the vulnerabilities of what author Michael Pollan refers to as the ``Vegetable-Industrial Complex.'' The ability of Salinas Valley farms to grow enough spinach to feed the entire nation comes at a price. If something goes wrong, it goes wrong big time.

This outbreak was exceptionally difficult to trace back to its source because Natural Solution Foods ships bagged spinach all over the country under many different labels. Eventually, 26 states, ranging from Washington to Virginia, reported cases of illness, and one case occurred in Canada.

The current system produces abundant food at low cost, but at the risk of safety failures that can affect large numbers of people. If we want to continue this system, we need better food safety procedures. Alternatively, we can promote locally grown foods. These also can become contaminated, but they will cause more limited damage.

Lesson 4: Let's raise healthier farm animals: Nobody knows where *E. coli* 0157:H7 came from in the first place, but the best guess is that it evolved as an unintended consequence of the switch-over from grass to corn and soybeans as food for cattle. Nutritionally concentrated feeds change conditions in cattle's digestive systems to favor the survival of hardier bacteria. At least one study suggests that grass feeding supports a more typical and safer population of intestinal bacteria. If true, this is a good reason to get cattle out of the feedlots and back to eating grass.

Lesson 5: Forget voluntary. It never works: It is instructive to read the FDA's increasingly strident warnings to vegetable producers over the years to keep animals and their wastes well away from crops. The 1998 advisory made it clear that the FDA was issuing guidance, not regulation, and that its advice would not be subject to enforcement. This gave growers the option of ignoring the warnings, which most did. The FDA's more recent and much tougher warnings also have had little effect.

Lesson 6: The food safety system needs an overhaul: The absurdities of the present food safety system would be comical if the consequences weren't so tragic. The FDA is in charge of vegetable crops and only becomes involved once bags of spinach are contaminated -- ``adulterated'' in FDA-speak. The Centers for Disease Control and Prevention investigates outbreaks after the fact. The USDA is responsible for animal health; its jurisdiction starts at the slaughterhouse. For all practical purposes, no agency oversees what happens on farms.

Lesson 7: Contaminated spinach is a political issue: Congress has not given FDA the authority or resources to enforce safety procedures on farms. As former USDA food safety official Michael Taylor points out, the burden of the mess in our food safety system falls squarely on Capitol Hill.

Some in Washington are now recognizing the urgent need for a coordinated farm-to-table food safety system. Since the early 1990s, the watchdog Government Accountability Office has repeatedly called on Congress to unify food safety functions under a single agency and to give it the authority and resources needed to oversee the entire food system. The Durbin-DeLauro bill would do just that.

Certainly, calling for more regulations is not a popular stance. Regulations are difficult to follow, generate costs, and are not always applied fairly or consistently. But nothing less has worked. If California wants the nation to keep buying its spinach and other crops grown here -- and if Californians want the produce they eat to be safe -- then the system must be fixed.

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