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Greene Gardens

Gregory A. Baker ^a and Kirk O. Hanson ^b

^a *a Professor of Management and Director of the Food and Agribusiness Institute, Leavey School of Business, Santa Clara University, Santa Clara, CA, 95053-0396, U.S.A.*

^b *Executive Director of the Markkula Center for Applied Ethics and University Professor of Organizations and Society, Santa Clara University, Santa Clara, CA, 95053, U.S.A.*

Abstract

The case describes the 2006 *E. coli* outbreak in the California spinach industry. The case unfolds over a period of about one month, with four separate eventful days described in detail. At the end of the narrative for each day, the reader is asked to decide how he or she would respond to the events and justify his or her decision.

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[Ⓢ]Corresponding author: Tel: + 408 554-5172

Email: gbaker@scu.edu

Other contact information: K. O. Hanson: kohanson@scu.edu

IAMA Agribusiness Case 12.1

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Greene Garden¹

(A) First Reports - Day 1

Sam Greene sat in front of his computer and read with alarm a news story indicating that the Food and Drug Administration (FDA) had issued a warning to consumers to avoid eating fresh bagged spinach. The report indicated that an outbreak of *E. coli* in eight states had resulted in the death of one person and the illness of 49 others (U.S. Food and Drug Administration, 2006a). The outbreak involved *E. coli* 0157:H7, a virulent strain that may lead to bloody diarrhea, dehydration, kidney failure, and, in rare instances, death. See exhibit 1 for additional information on *E. coli* 0157:H7.

Greene was a large grower of fresh vegetables headquartered in California's Salinas Valley. His company, Greene Gardens, produced broccoli, cauliflower, Brussels sprouts, cabbage, lettuce, and spinach on several ranches. He was a contract grower for a large processor, GRT Salads, which harvested about 80% of the product grown on his ranches and marketed the product under many labels. He sold the remainder of his produce to a smaller processor, Tossed Fresh, under a similar arrangement.

The Salinas Valley, located in Monterey County, is the largest producing area in the U.S. for fresh spinach. There were several major processors of fresh leafy vegetables located in Salinas Valley. GRT was one of the larger processors. It sourced product from several producers, with about 20% of its production coming from Greene Gardens. See exhibit 2 for a map detailing the location of the production areas and the reported illnesses.

The news story went on to report that the first reported case had occurred three weeks earlier. However, only recently did health officials determine that spinach was the likely problem. When patients are diagnosed with food poisoning, they are routinely interviewed to determine what they have eaten. The only food eaten in common by all of the patients affected by the recent *E. coli* outbreak was bagged fresh spinach. While tests on the product would be needed to determine if spinach was in fact the cause, no other products had been implicated. When asked whether consumers should avoid bagged salads, an FDA health official said that there was no information at this time to indicate that bagged salad was contaminated. Exhibit 3 provides information on food quality assurance in California and the U.S.

¹ The scenarios in this case are realistic and based on factual accounts. Although, the facts related to the *E. coli* outbreak in spinach mirror the actual outbreak and press releases, the firms discussed in the case are fictitious.

Questions

1. If you were Sam Greene, how would you respond to the first reports of contaminated spinach? Be specific as to the actions you would take.
2. What factors would you consider and how would you make your decision? To whom are your primary obligations?

(B) The Search Narrows – Day 9

Greene sat again at his computer and read an update from the FDA. The total number of cases of E. coli infection had risen to 166 people in 25 states (U.S. Food and Drug Administration, 2006b). See exhibit 4 for an updated map of the reported illnesses. The FDA was working closely with the Centers for Disease Control and Prevention (CDC) and the State of California to isolate the source of the outbreak. Information collected to date implicated fresh bagged spinach grown in three California counties, Monterey, San Benito, and Santa Clara. The statement went on to indicate that spinach grown in the rest of the U.S. had not been implicated. Furthermore, other produce grown in the three California counties had not been implicated. Health investigators were continuing to work to further narrow the source of the contamination.

To date, three companies had voluntarily recalled products containing fresh spinach, including GRT Salads. Because of the uncertainty surrounding the E. coli contamination in spinach, sales of bagged spinach throughout North America had virtually stopped.

Questions

3. How would you respond to this new information? Be specific as to the actions you would take.
4. What actions would you take regarding the spinach products you market through Tossed Fresh?
5. What actions would you take in regard to the other crops you produce?

(C) Processor Identified – Day 16

It was now 15 days since the first announcement by the FDA of contaminated spinach. Greene had become accustomed to checking his computer more frequently than was usual for him as he awaited the almost daily FDA update on the unfolding spinach crisis. Most of the statements simply updated the number of cases of E. coli contamination caused by fresh bagged spinach. However, today's statement was different. The FDA announced that all of the spinach implicated in this recent outbreak had been traced back to one processor (U.S. Food and Drug

Administration, 2006c), GRT Salads, the processor that bagged and marketed 80% of all of the vegetables grown by Greene Gardens.

The FDA made this determination based on laboratory findings of product samples. The analysis of 10 product samples in 8 states had confirmed the presence of a strain of *E. coli* O157:H7 (U.S. Food and Drug Administration, 2006c). All of these product samples had been processed by GRT Salads.

A total of 187 cases of *E. coli* O157:H7 infection due to fresh bagged spinach had been reported in 26 states and Canada. The contamination had been linked to one death (U.S. Food and Drug Administration, 2006c). See exhibit 5 for an updated map of the reported illnesses.

Although Greene was troubled that the FDA had pinpointed GRT Salads as the source of all of the contaminated spinach, he knew that they (GRT Salads) sourced product from many different growers. Furthermore, the FDA also indicated that the source of the *E. coli* contamination had not been traced to a specific field.

The latest statement said that “there has been a long history of *E. coli* O157:H7 outbreaks involving leafy greens from the central California region.” The statement went on to state that “... FDA and the State of California expect the industry to develop a comprehensive plan which is designed to minimize the risk of another outbreak due to *E. coli* O157:H7 in spinach grown in central California. While this plan is under development, FDA and the State of California reiterate our previous concerns and advise firms to review their current operations in light of the agency’s guidance for minimizing microbial food safety hazards,” (U.S. Food and Drug Administration, 2006c).

Questions

6. How would you respond to this new information? Be specific as to the actions you would take.
7. Given the increasing likelihood that the source of the contamination may be from Greene Gardens’ spinach, what would you do in regard to the other products you grow and to the fresh bagged spinach marketed through Tossed Fresh?

(D) Source Identified – Day 29

Today, Greene did not have to check his computer for an update on the spinach outbreak. He received a late morning call from an official at the FDA informing him that samples collected by California officials from a field on one of his ranches had tested positive for the strain of *E. coli* O157:H7 responsible for the recent outbreak.

The FDA suspected that cattle feces might be the cause of the contamination, but contaminated feces had not been found in Greene's field .

In a statement issued later that day, the FDA announced that they and the State of California were reporting laboratory results indicating that the strain of *E. coli* O157:H7 found in contaminated spinach had been found in four different fields on four ranches in Monterey and San Benito counties. The statement went on to say that "Samples of cattle feces on one of the implicated ranches tested positive based on matching genetic fingerprints for the same strain of *E. coli* that sickened 199 people," U.S. Food and Drug Administration, 2006d).

Questions

8. What actions would you take in response to the FDA and State of California findings?
9. How would you respond to the FDA and State of California statement that the industry should develop a plan to minimize the risk of another *E. coli* O157:H7 outbreak? What should be done to ensure the safety of processed produce in the future?

References

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Exhibit 1.

Background information on E. coli 0157:H7

Escherichia coli (E. coli) is present in the intestines of people and animals. Although most strains of E. coli are harmless, E. coli 0157:H7 is a virulent strain of the bacterium that can cause severe illness, including bloody diarrhea, dehydration, kidney failure, and, in rare instances, death. Transmission of the bacterium typically occurs through ingestion of contaminated feces. Animal products, including dairy and meat products may be contaminated with E. coli, although proper cooking (or pasteurization, in the case of milk) will kill the bacterium. Fruits and vegetables may be contaminated with E. Coli., often due to the presence of E. coli in irrigation water. Cleaning the fruit or vegetable with a disinfectant or cooking will make the food safe to eat. A definitive diagnosis of E. coli poisoning is typically made by conducting a stool culture.

There have been several major outbreaks of E. coli 0157:H7 in the U.S., with many of the outbreaks in meat, primarily hamburger meat, and fresh produce, including lettuce, melons, and alfalfa sprouts, among others.

Exhibit 2.

Map of Production Locations and Timeline of Reported Outbreaks, Day 1

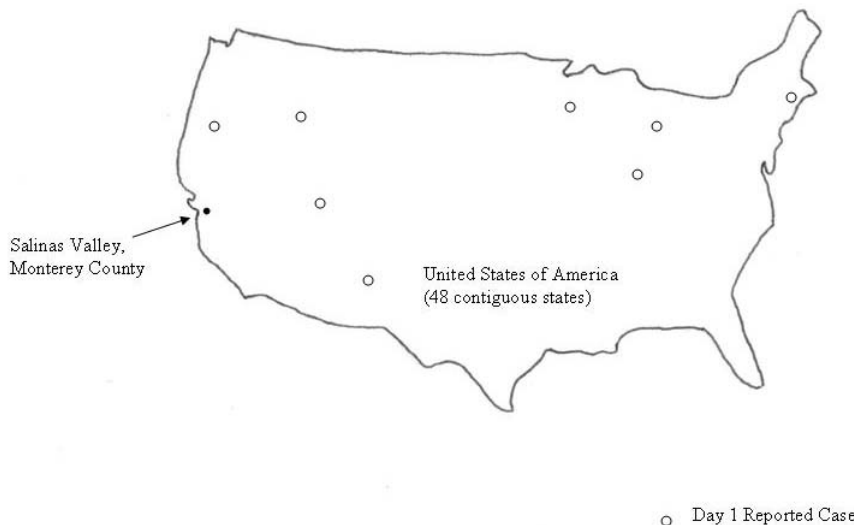


Exhibit 3.

Food Safety Assurance

The safety of fresh produce is largely the responsibility of producers and processors. The Food and Drug Administration (FDA), U.S. Department of Agriculture (USDA), and California Department of Food and Agriculture (CDFA) have little jurisdiction over farms and little enforcement authority. The FDA is largely restricted to issuing warnings and requesting voluntary recalls. The major incentive producers and

processors have to ensure that the products they produce are safe is the reputation of their firms and brands, as well as the legal and financial liability they incur when they sell contaminated products.

Exhibit 4.

Map of Production Locations and Timeline of Reported Outbreaks, Day 9.

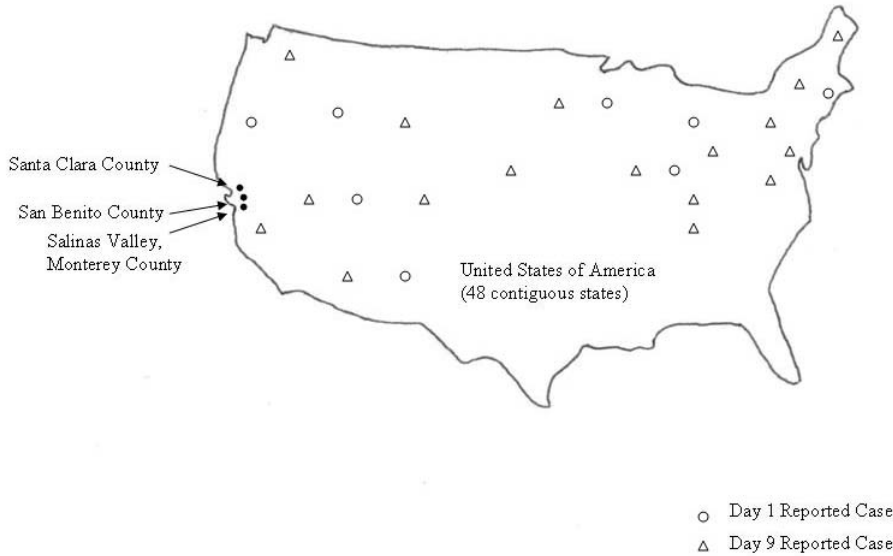


Exhibit 5.

Map of Production Locations and Timeline of Reported Outbreaks, Day 16.

