My name is Caroline Smith DeWaal. I am the director of Food Safety for the Center for Science in the Public Interest. We represent 900,000 consumers in both the United States and Canada on issues related to food safety, nutrition, alcohol, and science policy.

In December 1992, Lauren Rudolf was almost seven years old. She ate a hamburger at a Jack in the Box restaurant near her home in San Diego and became the first fatality in the Jack in the Box outbreak. That outbreak provided a wake up call for government leaders as consumers became aware that this deadly bacterium might be in the meat that they purchase. Following the Jack in the Box outbreak, which ultimately sickened 700 and killed 4 children, both government and the meat industry took steps to reduce the likelihood that deadly strains of *E. coli* in meat would harm them. The government implemented a zero tolerance for this pathogen in raw ground beef and the meat industry, after much trial and error, implemented a test and hold program. CSPI’s data on food borne illness outbreaks clearly show that the risk of illness from beef outbreaks has been declining since 2000.
This latest outbreak from packaged spinach may prove the same type of watershed event for the produce industry that the Jack in the Box outbreak was for the beef industry. Until September, consumers remained largely unaware that produce is a growing cause of food poisoning in the U.S. In fact, however, outbreak data has shown for several years that consumers are more likely to get ill from a produce-linked outbreak than any other single food source – not chicken, beef or seafood. The food making us sick is often the very foods we should eat more of – fruits and vegetables.

Since 1995, 19 outbreaks associated with leafy green vegetables have been traced back to California, including the Salinas Valley, which is implicated in the recent spinach outbreak. Leafy greens, however, are not the only vegetables associated with foodborne illness. Just a few days ago, FDA investigated another California processor in connection with the botulism outbreak associated with carrot juice. And CSPI’s database contains over 600 outbreaks linked to many produce varieties.

Consumers want to eat fresh vegetables and fruits. And we love the convenience of having a salad on the table in just a few minutes when it used to take much longer. But consumer confidence in the safety of these products has been taking a hit over the last few years, and this latest outbreak, impacting 200 consumers in 26 states, with nearly as many fatalities as Jack in the Box, may prove to be a tipping point for consumer confidence unless the industry and the government can offer up solutions to the risks that are now so evident.
Reduced consumer confidence in bagged salad products would be bad news both for consumers and the produce industry, so I am here to urge the California legislature to mandate reforms in this industry and to send state auditors to enforce them. These steps cannot wait for the federal government, which has been entirely too slow to heed the warning signs. And recent cut backs in the food programs at the Food and Drug Administration leave it unable to act proactively – it lacks the policy and inspection force and probably the political will to address this problem in an appropriate time frame.

The California legislature should act promptly to protect consumers’ health and reduce the damage to your produce industry. The theories of what happened in this case are numerous, but many point to contamination from a water source – irrigation water or flood water – that overwhelmed the washing system. Sometimes an overload of organic material can destroy the efficacy of the chlorine that is used in the wash water. Ensuring the incoming product carries low bacteria levels is essential to ensure that the washing system is not overwhelmed.

Some likely scenarios are certainly not pleasant to consider when talking about a food product that grows right on top of the ground. Irrigation water mixed with treated sewage water or manure could definitely cause the type of contamination that caused such widespread illnesses, as could flooding from adjoining fields where cattle graze or manure may be stored. Application of raw or partially composted manure too close to the harvesting time could also raise the possibility of widespread contamination of a field. Importantly, these point to a systemic event, not a random cow or deer walking through the fields.
The solutions are also not rocket science:

1. Water should be safe for its intended purpose. Irrigation water should be of standard water quality in the area, and free of manure or sewage effluent.

2. Water used for washing should contain effective antimicrobials at sufficient levels to minimize or eliminate contamination.

3. Manure should be treated to eliminate pathogens and applied so as to maximize the time between application and harvest.

4. Workers should have access to bathrooms and handwashing stations close to the harvest areas.

5. Clean transportation and temperature control for fresh and processed produce is essential.

6. Traceback of fruits and vegetables from the farm to the consumer would be ideal. If not achievable, traceback from consumer to processor, and from processor to farms would help speed the identification of the source and minimize the length and breadth of recalls.

In evaluating necessary requirements for the fruit and vegetable industry, I urge California to look beyond FDA’s Guide to Minimize Microbial Food Safety Hazards for Fresh Fruits and Vegetables. An excellent Code of Hygienic Practices for Fresh Fruits and Vegetables was developed by the Codex Commission, an international standard setting body of the World Health Organization and the Food and Agricultural Organization of the United Nations. I recommend that California consider this Code, which requires among other things testing of water for microbial and chemical contaminants and has other strong requirements, as a basis for state action.
But strong standards alone are not enough. The role of audits and government inspections is critical to ensure that the standards are being uniformly employed. I think California has both a challenge here and also the opportunity to create a system that will guide the federal government in what it should do. And setting and enforcing high standards will only protect your industry. Strong science-based standards set by California could ultimately be adopted by retailers and food chains as the gold standard, and these private companies will start to require them of their suppliers and help enforce them for you. Hence, it would be critical to involve these players, as well as consumer representatives, in developing the standards along side the industry representatives. This is a challenge, but one that California, with its “best in the nation” emission standards and Proposition 65, is used to.

To close, I would like to urge the Committee to remember Lauren Rudolf, as well as the newer group of victims that has emerged out of this outbreak. Protecting consumers is your first job. Without leadership in Washington, without federal agencies empowered to manage these hazards, it falls to states to take action to protect their consumers and their industry. You can do both.
CSPI Outbreak Alert Data: INFO on PRODUCE OUTBREAKS

Figure 1. Trends in Outbreak Reporting, 1998-2004. Outbreak reporting has improved in recent years due to more intensive surveillance by state and local health departments and better reporting of outbreaks to CDC. Produce outbreaks with an identified hazard have in recent years surpassed the number of outbreaks in poultry, beef, pork, and eggs. Although there are generally more outbreaks reported in seafood, the number of cases of illness in produce outbreaks far exceeds those made ill in seafood outbreaks.

SOURCE: OUTBREAK ALERT! Database maintained by the Center for Science in the Public Interest. We use CDC data and other highly reliable sources (e.g. medical journal articles) to track food borne illness outbreaks by food source. Our database contains 5000 outbreaks with both food and hazard identified spanning the 15 years from 1990 to 2004. A peer reviewed article describing the database was recently published in Food Protection Trends (June 2006), a journal of the International Association of Food Protection. (Principle author, Caroline Smith DeWaal, food safety director at the Center for Science in the Public Interest.)
**Figure 2.** The average number of cases in produce outbreaks have an average of approximately 43 cases per outbreak, which is far greater than the average number of cases in beef, poultry, and seafood outbreaks.

![Figure 2. Average Cases Per Outbreak by Category 1998-2004](image)

**Figure 3.** The average number of cases in produce outbreaks involving *E. coli* between 1998 and 2004 are greater than the average number of cases in beef, poultry, and seafood.

![Figure 3. Average Size of E.coli Outbreak By Category 1998-2004](image)

**SOURCE:** OUTBREAK ALERT! Database maintained by the Center for Science in the Public Interest. We use CDC data and other highly reliable sources (e.g. medical journal articles) to track food borne illness outbreaks by food source. Our database contains 5000 outbreaks with both food and hazard identified spanning the 15 years from 1990 to 2004. A peer reviewed article describing the database was recently published in Food Protection Trends (June 2006), a journal of the International Association of Food Protection. (Principle author, Caroline Smith DeWaal, food safety director at the Center for Science in the Public Interest.)
Figure 4. This figure shows the number of produce outbreaks due to *E. coli* 0157 between the years 1998 and 2004.

![Figure 4. Produce Outbreaks Due to E. Coli 0157 1998-2004](image)

Figure 5. Produce-Linked Outbreak Vehicles 1990-2004*

*Slices Represent Percent of Total Outbreaks Attributed to Vehicle

![Figure 5. Produce-Linked Outbreak Vehicles 1990-2004*](image)

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