

Public perceptions of the deadly 2011 outbreak of *Listeria monocytogenes* in cantaloupe

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Introduction

In the summer and fall of 2011, whole cantaloupe contaminated with *Listeria monocytogenes* caused the most deadly foodborne illness outbreak in the U.S. since 1925. The CDC confirmed that 147 people from 28 states were infected and 33 people died, plus one miscarriage as a result of eating affected melons, which were linked to Jensen Farms in Colorado. Ninety-nine percent of those confirmed infected were hospitalized; 58% were female and ages ranged from < 1 to 96.



The CDC sent out the following advice to consumers:

Contaminated cantaloupes may still be in grocery stores and in consumers' homes.

CDC recommends that persons at high risk for listeriosis, including older adults, persons with weakened immune systems, and pregnant women, do not eat cantaloupes marketed as coming from the Rocky Ford region of Colorado.

Consumers who have cantaloupes in their homes can check the label or inquire at the store where they purchased it to determine if the fruit was marketed as coming from the Rocky Ford region of Colorado.

Listeriosis primarily affects older adults, persons with weakened immune systems, pregnant women, and newborns. Persons who think they might have become ill from eating possibly contaminated cantaloupes should consult their doctor immediately.

Cantaloupes marketed as coming from the Rocky Ford region should be disposed of in a closed plastic bag placed in a sealed trash can. This will prevent people or animals from eating them.

The goal of this study was to understand public awareness and reaction to the outbreak and subsequent recall of cantaloupe.

Materials & Methods

A national Internet survey was conducted with 1,924 American adults in December 2011 by Knowledge Networks, now GfK Custom Research. The survey completion rate was 65.3%. The data presented here were weighted to be nationally representative.

Results

AWARENESS

Table 1 shows the percentages of people aware of the cantaloupe recall.

Table 1: Percentages of Americans aware of cantaloupe recall

Did you hear about cantaloupe recall?	%
YES	65.0
NO	26.0
I don't recall	8.9

Those who reported having eaten cantaloupe prior to the recall were significantly more likely to have heard of the recall (χ^2 (N= 1911) = 22.95, $p < .0001$).

Using logistic regression, we found the following groups to be significantly more likely to be aware of the recall:

- Older Americans ($p < .000$),
- Higher education levels ($p < .000$),
- No children living in the home ($p < .001$),
- Not being Hispanic or African American ($p < .05$),
- Having household Internet before joining the survey panel ($p < .05$).

Gender and marital status were not associated with awareness.

Table 2: Sources of information about cantaloupe recall

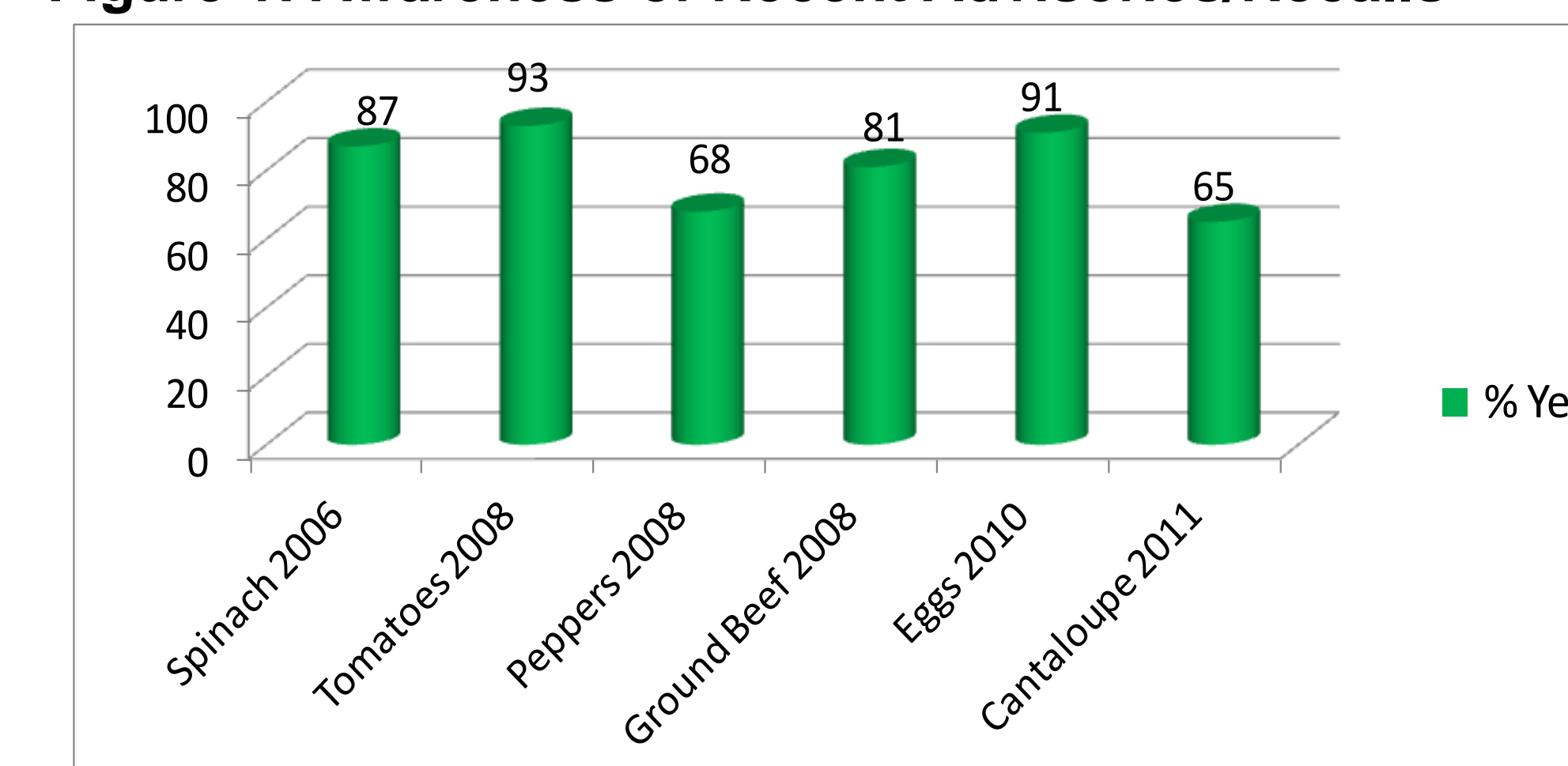
Where did you receive information about recall?	%
Television	78.3
Newspaper	27.1
Radio	23.5
Another person	18.4
Social media	3.1

The majority were not aware that deaths occurred -- **only 27%** of those aware of the outbreak believed that anyone had died as a result of it. When that group was asked to guess how many had died, the median response was 9.63 (Range 0-300).

COMPARISON WITH OTHER OUTBREAKS

The survey permits comparisons between awareness of and reactions to the cantaloupe outbreak and other recent, large-scale outbreaks that have occurred in the US, including *E. coli* in spinach in 2006, *Salmonella* Saintpaul in peppers in 2009, ground beef recalled in 2008, and eggs contaminated with *Salmonella* Enteritidis in 2010.

Figure 1: Awareness of Recent Advisories/Recalls



BEHAVIORAL RESPONSE

The behaviors reported may reflect a lack of perceived severity. Of those aware of the recall and who ate cantaloupe prior to the outbreak (n = 742) **only 44% stopped eating cantaloupe during the recall**, and 81% of those who did stop eating it said they definitely or likely will eat cantaloupe again in the future.

Table 3: What makes contaminated cantaloupes safe to eat?

Please put a check next to ALL of the actions you think would make a contaminated cantaloupe safe to eat.	%
Scrub the outside of the cantaloupe with a brush under running water	29.4
Rinse the outside of the cantaloupe	25.5
Peel the cantaloupe	22.6
Check the cantaloupe for signs of contamination	17.6
Rinse the flesh on the inside	14.8
Cook the cantaloupe to 160° F	7.4
None of these actions will make a contaminated cantaloupe safe to eat	56.7

Conclusions

- The majority of Americans have heard of the outbreak. Not surprisingly, those who didn't eat cantaloupe prior to the outbreak were less likely to have heard about it.
- The deadly nature of this outbreak was not known to most Americans.
- Television remains the main source of information.
- Fewer people were aware of this outbreak compared to other large, well-publicized outbreaks.
- Just over half of Americans believe that nothing can be done to make contaminated cantaloupe safe to eat, but many people believe (incorrectly) that washing or scrubbing the outside will make it safe.
- Our data indicate that there is not likely to be a major long-term effect on cantaloupe consumption.

References

Centers of Disease Control (2011). Multistate Outbreak of Listeriosis Linked to Whole Cantaloupes from Jensen Farms, Colorado. Retrieved from <http://www.cdc.gov/listeria/outbreaks/cantaloupes-jensen-farms/120811/index.htm>

Centers of Disease Control (2012). Multistate Outbreak of Listeriosis Linked to Whole Cantaloupes from Jensen Farms, Colorado. Retrieved from <http://www.cdc.gov/listeria/outbreaks/cantaloupes-jensen-farms/082712/index.html>

Food Safety News (2012). The 10 Deadliest Outbreaks in U.S. History – Revisited. Retrieved from <http://www.foodsafetynews.com/2012/04/the-ten-deadliest-outbreaks-in-history----revisited>

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