



Defending America's Food Supply against Terrorism: Who is Responsible? Who Should Pay?

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Most Americans are confident their food supply is safe from natural contaminants. Even though the federal Center for Disease Control (CDC) estimates that about one person in four contracts a food-borne illness each year, and that 325,000 hospitalizations and 5,000 deaths occur annually due to consumption of inadvertently contaminated food (Mead et al., 2002), the public generally believes the food they purchase will not make them sick. Occasionally, well-publicized product recalls occur, such as the Fall 2006 discovery of *E. coli* 0157 H7 in spinach. But, those recalls are generally interpreted as signs government agencies are exercising proper diligence in protecting the nation's food supply, not as warnings that America's food supply is unsafe.

Al Qaeda's September 11 attacks and the subsequent anthrax incidents raise an additional concern for America's food industry. Deliberate contamination of the nation's food supply is a real possibility and the economic and psychological implications of an attack on the food supply are sobering. Some foods are more susceptible to deliberate contamination than others, but there is no practical way one can eliminate the possibility of being affected. Food terrorism utilizes a vector that affects everyone. Were the same 325,000 hospitalizations and 5,000 deaths that we routinely accept from accidental food contamination to come instead from a terrorist act, there would be a national crisis.

Policy makers and the food industry are beginning to recognize the importance of defending our already safe food supply from terrorism. Preparing for, protecting against, and planning responses to attempts to deliberately

contaminate food with unfamiliar toxins with high mortality rates has become a national and a food industry priority.

At present, there is little empirical information on how consumers view food defense. Public policy makers and food industry executives have been forced to generalize from their experiences with food safety as they plan strategies to protect the food supply chain. But, there are important differences in perceptions and in policy between food safety and food defense. It will be necessary to do more than simply transfer lessons learned about the public's attitude about food safety policy to plans for food defense.

This paper reports results from a large survey of U.S. residents conducted in August 2005. That survey, designed primarily to provide information about public attitudes and concerns about terrorism, also included a set of questions contrasting consumer perceptions of food safety and food defense. Differences found in the degree of public concern and in the public's perceptions of who is responsible and who should pay should be useful to the food industry and to public officials as they shape future food defense policy.

How Do We Think about Catastrophic, but Low Probability Events?

Psychologists know that consumers willingly accept high levels of risk voluntarily, but are loath to be subjected to risk and uncertainty that is involuntary (Lowrance, 1976; Kuchler & Golan, 2006). Classic examples are general acceptance of the risk of injury or death from driving an automobile compared to outrage and anger over the sub-

stantially lower risk of contracting a dreaded disease like cancer. The low risk of being harmed by a terrorist attack on the food system, an event almost totally out of an individual's control and something one could be subjected to involuntarily, would be expected to produce more fear and public outrage than would more common and more likely hazards.

Consumers must eat food to live; ultimately an involuntary but familiar act. Death or severe illness caused by eating deliberately contaminated food is an involuntary risk, and therefore more troubling than a risk taken voluntarily like air travel. That means consumers would be expected to allocate more, on a risk-adjusted basis, to protect the food supply against a terrorist attack than to protect against airline hijackings.

How Concerned are Americans about Food Terrorism?

An Internet survey of public attitudes and concerns about terrorism was conducted during the first week of August 2005. The survey was funded by the National Center for Food Protection and Defense.¹ A representative sample of 4,260 U.S. residents over the age of 16 completed the interview. Their responses were then weighted by age, race and ethnic origin, sex, income, and geographic region to balance or align the sample with the characteristics of the national population. The weighted results can be interpreted as reflecting the beliefs of the national population,

1. *The National Center for Food Protection and Defense was established and funded by the Department of Homeland Security in July 2004. It is administered at the University of Minnesota.*

not simply the responses of those surveyed.

Our survey's major finding was that the public, even though they believe a terrorist attack on the food supply chain to be slightly less likely than other types of terrorism, would devote a greater proportion of the nation's anti-terrorism budget to protect against an attack using the food supply than to protect against any other type of terrorist event (Stinson et al., 2006). Respondents were given a list of seven types of terrorist attacks – airlines, other public transportation, monuments, food, power grid, release of chemical or biological agents, and other – and asked, "Of every \$100 currently being spent to protect the country from terrorism, how do you think it should be divided across the following types of attacks?" Protecting the food supply was the highest priority. The public would spend about \$1.13 to protect the food supply for every \$1.00 spent to provide security for the airways.²

The federal Transportation Safety Agency currently spends more than \$5 billion annually to prevent terrorists from hijacking aircraft (U.S. Office of Management and Budget, 2006). Although data are incomplete, that amount appears to be well beyond what is currently being spent for food defense or food safety.

In fiscal 2006, USDA's share of the \$8.6 billion budgeted government-wide for the national mission of defending against catastrophic threats was \$238 million (U.S. Office of Management and Budget, 2006).

2. *More complete results from that portion of the survey, including the exact wording of the question, is available at <http://foodindustry-center.umn.edu>; click on Consumer Terrorism Survey.*

A General Accounting Office (GAO) report estimated combined spending on food safety activity by the USDA's Food Safety and Inspection Service, the FDA, and the state agricultural and health departments to total about \$1.3 billion in 1999 (GAO, 2001). While there are no estimates of total current private sector spending for food safety, USDA reports that meat and poultry processors spent about \$380 million annually and made \$570 million in long-term investments between 1996 and 2000 to comply with USDA's 1996 Pathogen Reduction/Hazard Analysis Critical Control Point (PR/HACCP) regulation (Ollinger, Moore, & Chandran, 2004). That same survey found the U.S. meat and poultry industry made an additional \$360 million on food safety investments during that period for items not required by the PR/HACCP rule.

Most Confident U.S. Food Supply is Safe; Few Believe it is Secure from Terrorism

When public attitudes about food safety and food defense were probed, some dramatic differences were found. Respondents were asked to indicate their level of confidence that the food supply is safe. They were also asked how confident they were that the food supply was secure against terrorism. Responses were categorized using a six-point, forced-choice, Likert scale with 1 being not at all confident and 6, extremely confident. Only 36% of the public indicated they were not confident (rankings 1 through 3) that the food supply was safe and less than 4% indicated they were not at all confident. Nearly two-thirds (64%) indicated an above average level of confidence (rankings 4-6), with 5%

claiming to be extremely confident (Figure 1).

The percentages reversed when respondents were asked their level of confidence that the food supply was secure against terrorism. More than 62% said they were not very confident and 15% said they were not at all confident. Only 38% indicated an above average level of confidence in the ability of the food supply system's ability to absorb a terrorist attack without endangering public health and well-being.

Processors and Government Primarily Responsible for Food Safety and Defense

Our food travels many paths, makes multiple stops, and is handled by many persons on its way from farm to fork, so assigning responsibility for food defense is not a simple task. Its public goods nature means food defense is everyone's job, but also, no one's job. Those surveyed were asked, "With whom does the responsibility for the safety of the food you consume lie?" They were asked to organize their responses by ranking the different parts of the food supply chain, from farmers to retailers, as well as consumers and the government from 1 (least responsible) to 6 (most responsible). The same question was also asked for food defense.

The public assigns the greatest responsibility for food safety to the government and to food processors and manufacturers. More than 55% of U.S. residents ranked manufacturers and processors as either most responsible or second most responsible for food safety, and 30% ranked them most responsible. More than 45% of the public ranked government either most responsible or second most responsible, and nearly 33% (more than for food processors

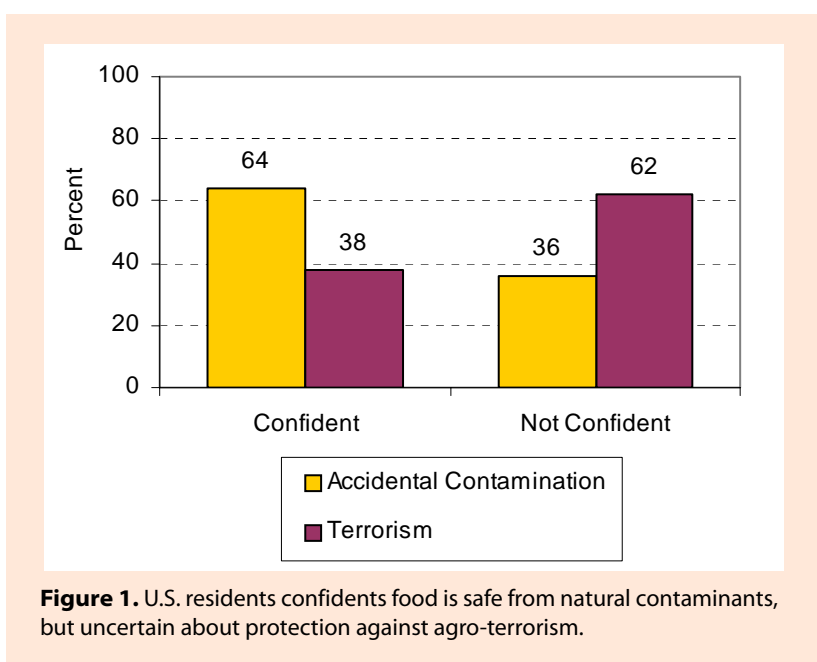


Figure 1. U.S. residents confident food is safe from natural contaminants, but uncertain about protection against agro-terrorism.

and manufacturers) ranked them most responsible. Consumers and farmers, on the other hand, were believed to be much less responsible for food safety. Farmers were ranked least responsible or second least responsible by 45% of the public. Consumers are seen as even less responsible. They were placed in one of the bottom two categories by 58% of the public. More than 47% said consumers were least responsible for food safety.

Americans Say Government Has Primary Responsibility for Food Defense

Responses to the question 'who is responsible for food defense?' were similar to those for food safety, but with an important difference. The public assigns the government a larger role in food defense than food safety. Nearly 41% of U.S. residents believed the government bears primary responsibility for protecting the food supply against terrorism; 33% assigned the government primary responsibility for food safety (Figure

2). Only 27% thought processors and manufacturers were the most responsible for food defense. Again, consumers and farmers were seen as those least responsible.

Who Should Pay for Food Safety and Food Defense?

Respondents also were asked, "If the cost of providing food safety is \$100, what portion of the \$100 should be borne by the following parties?" The same list of food supply chain components, from farmers to retailers, as well as consumers and the government, was provided. A similar question was asked, regarding 'who should pay for food defense?' Responses indicate the public believes the government should bear the largest portion of the costs of both food safety and food defense (Figure 3). And, consistent with the public's belief that the government has a larger role in food defense programs than in food safety, the portion of food defense costs that should be borne by the government (28%) was greater than that for food safety

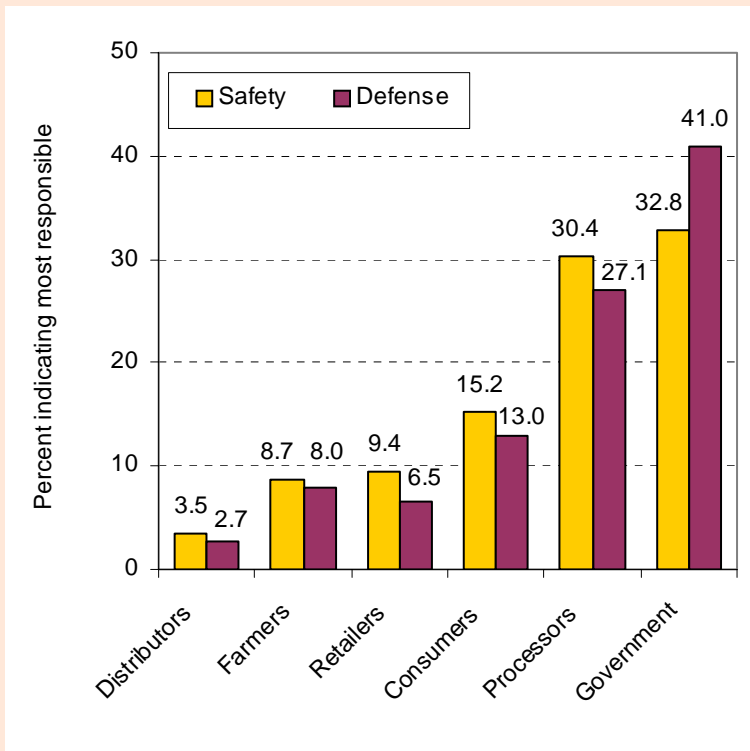


Figure 2. Public sees government as most responsible for food defense.

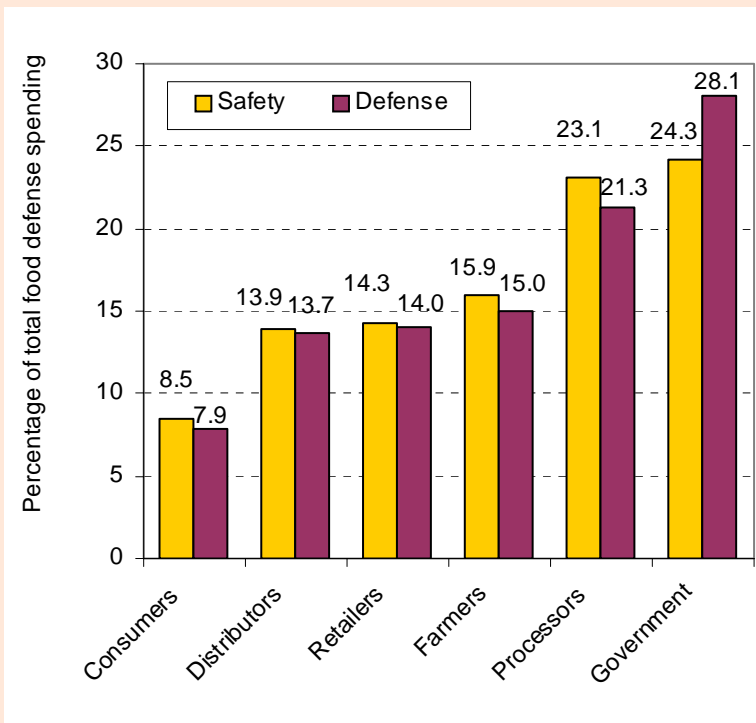


Figure 3. Public expects government and food processors to pay for food defense.

(24%). Manufacturers and processors were assigned the second highest percentages, which is also consistent with the public's perception of those most responsible for food safety and food defense. Consumers were assigned the smallest proportion of the costs of food safety and food terrorism; about 8% of each.

Finally, respondents were asked, "For every \$100 spent on both food safety and food defense, how much should be spent on food safety (reducing the risk to your food from natural and accidental contaminants), and how much should be spent on food defense (reducing the risks to your food from deliberate contamination)?" The survey found the public believes that about the same amount should be spent for food defense as food safety. Survey results show that, on average, U.S. residents would allocate 52% of the combined food defense/food safety budget to food safety, and 48% to food defense.

Some researchers believe that 50-50 responses are more likely to reflect the fact that respondents did not know how to allocate resources between the choices offered, not true preferences (Bruine de Bruin et al., 2002). Since more than half of all responses indicated a 50-50 split between spending for food safety programs and spending for food defense, the percentage allocation was also calculated after omitting all 50-50 responses. That subset would spend slightly more (55%) on food safety, leaving 45% of the combined food safety and food defense budget for food defense.

Looking Ahead

Terrorism poses new challenges for the food industry and for the government. Simply following and enforc-

ing best food safety practices will not provide sufficient protection against a terrorist attack on our food supply. The particular challenges posed by terrorism will require new approaches by the government and the food industry. Improved security all along the food supply chain will be essential, as will an expanded regimen of testing for potential toxins. Voluntary compliance is not guaranteed, and additional regulation of food processors is also likely to be necessary. Results from this survey indicate the public is concerned about food defense and that they will hold both the government and food manufacturers responsible should a food terrorism incident occur.

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