

FEDERAL EFFORTS TO MITIGATE VULNERABILITIES IN THE FOOD SUPPLY  
CHAIN

Testimony of  
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To:  
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Subcommittee on Emerging Threats, Cybersecurity, and Science and Technology

Mr. Chairman and Members of the Subcommittee

I am Allen Matthys, Vice President, Federal and State Regulations, Grocery Manufacturers Association (GMA). Thank you for inviting GMA to participate in this Hearing to discuss Federal efforts to mitigate vulnerabilities in the food supply chain. The food industry is committed to assuring the safety and security of the U.S. food supply. This includes company or third part audits as well as a review of any government inspection reports.

Food safety concerns deal with identifiable risks and incorporate mitigation steps (including Hazard Analysis Critical Control Point (HACCP) evaluations, time/temperature processes, etc.) to control or reduce the likelihood of a problem occurring. Food defense addresses the intentional adulteration of food products and/or ingredients using chemical, bacteriological and/or radiological agents. This requires a vigilant effort from the food manufacturer to know how to identify the vulnerabilities and to adopt effective mitigation strategies.

The food industry has worked collaboratively with various federal agencies for several years to ensure that best practices are identified and disseminated and to develop mechanisms for federal agencies to share intelligence with the food industry that can enable companies to target their vigilance.

In preparing for a deliberate attempt to contaminate the food supply, food companies have participated in vulnerability assessments with government officials (the Strategic Partnership Program Agroterrorism (SPPA)), with industry trade associations, or independently and participated in Table Top Exercises designed to simulate an actual attack on the food supply. The SPPA program introduced industry to the CARVER + Shock vulnerability assessment but the information was available only to those companies that participated in the SPPA event. FDA recently released a CARVER + Shock software tool that provides a means for all companies to conduct a vulnerability assessment of their operations.

Food safety and food defense are the ultimate goal of all food companies. Achieving that goal requires the cooperative efforts of the regulatory agencies (federal, state, and local) and the food industry.

### **Food Industry Action**

When information surfaced indicating that the food and agriculture sector was considered as a potential target for terrorist organizations, regulatory officials communicated this information to the industry. FDA officials indicated that they had conducted an internal analysis of several food product categories using the CARVER + Shock analyses and identified a number of considerations that affect the risk that a food, at a particular point in its production, could become the target of intentional contamination. The following four characteristics were common to each of the food products identified as being at a higher risk:

- Large batch size, resulting in large number of servings
- Short shelf life or rapid turnaround at retail and rapid consumption
- Uniform mixing of contaminant into food
- High accessibility to the critical node of production, processing or distribution

The “higher risk” foods received priority attention by FDA for the identification and implementation of preventive measures. Likewise, USDA began a similar analysis of meat and poultry products. [The initial reports were then provided to Department of Homeland Security (DHS) officials and duly classified as “Top Secret” and thus became inaccessible to food industry representatives.]

Points to Cover:

**Deliberate Contamination still viewed as a low potential risk versus food safety concerns from conventional contamination or product mishandling or mislabeling (also economic adulteration has potential to be a food safety event).**

### **Strategic Partnership Program Agroterrorism (SPPA)**

Individual food companies have volunteered to participate in the SPPA program for several commodity groups identified by FDA/USDA as fitting the potential target profile. The SPPA is a cooperative initiative among federal and state government agencies and private sector volunteers to provide government and industry with a more complete sector-wide perspective of food and agriculture defense. Under the initiative, vulnerability assessments are conducted in the food and agriculture sector using CARVER + Shock\* evaluation to help distinguish between real and perceived food defense vulnerabilities and risks within the food and agriculture sector. It also assists in identifying potential mitigation measures and strategies that may be appropriate for the food and agriculture sector. In addition, the SPPA has assisted in the identification of research needs and the allocation of research investments to address priority needs.

These vulnerability assessments with industry on a variety of foods regulated by the Food and Drug Administration a number of research questions were generated. The commodities evaluated were dairy products, fruit juices, bottled water, water used for food processing, and infant formula. The research questions fell into the following general categories:

- partitioning of chemical compounds into the water or lipid fractions of a food;
- thermal stability of chemical and microbiological agents;
- stability of chemical and microbiological agents to acidic and alkaline pH;
- changes in food conductivity upon exposure to chemical agents;
- UV inactivation of biological agents;
- effectiveness of disinfection agents against chemical and biological agents;
- oral toxicity of chemical agents; and
- filtration to eliminate or reduce chemical and biological agents

A summary of the main research results released to date is provided at <http://www.cfsan.fda.gov/~dms/defres05.html>

## **Regulatory Requirements under Bioterrorism Act**

The Public Health Security and Bioterrorism Preparedness and Response Act of 2002 (Bioterrorism Act) provided FDA with the authority to promulgate regulations concerning registration of food facilities, establishment and maintenance of records, prior notice of imported food shipments and administrative detention of food. FDA rules are in place and being enforced. Unfortunately, funding for the 600+ additional inspectors initially provided to CFSAN to better enforce the regulations has evaporated and the agency has had to reduce staffing to cover the budget. This has largely negated any gain in efficiency the agency received by having prior notice of all food imports so they could coordinate sampling and inspection efforts. Agency funding is critical to enforcement operations.

GMA is an active member of the *Food and Agriculture Sector - Government Coordinating Council* (FASCC).

### **FASCC**

A self-organized, self-run and self-governed committee, composed of members in the food and agriculture sector that serves as the government's point of entry into each sector (i.e., plant and animal producers, processors/manufacturers, restaurants/food service, retail, warehouses and agriculture production) for developing and coordinating a wide range of infrastructure protection activities and issues (e.g., research and development, outreach, information sharing, vulnerability assessments/prioritization, shielding and recovery).

GCC FASCC: The government counterpart to the SCC that is established to enable interagency coordination of agriculture and food defense strategies and activities, policy, and communication across government and between the government and each sector to collaborate and develop consensus approaches to the CI/KR protection. Membership is comprised of various levels of government (Federal, State and Territorial, local and tribal).

## **Food and Agriculture Sector Joint Committee on Research**

### **Guidelines available to industry**

Materials available from FDA, USDA, and industry  
<http://www.cfsan.fda.gov/~dms/defguids.html>

### **Private Sector Needs**

- Better vulnerability assessment tools (FDA software tool attempts to address this need)
- Efficient area surveillance technologies

- Chemical/biological agent detection sensors – must be rapid, inexpensive, low false positive, low false negative, multi-agent, multi-food, easy to use, low acquisition and operation costs
- Definitive cleaning/sanitizing and decontamination methods
- Traceability tools
- Robust communication tools between the food industry and federal, state and local authorities
- A clear understanding of how a bioterrorist event will be communicated to consumers and coordinated with other stakeholders
- Basic understanding of CBR agents
- Coordinated activities between the various federal agencies are still confusing and needs to be clarified including how state authorities are integrated into the food defense strategies and tactics

### **CARVER + Shock Vulnerability Assessments – Tools for individual company evaluations**

\*CARVER + Shock is an offensive targeting prioritization tool adapted from the military version (CARVER) for use in the food industry. The tool can be used to assess the vulnerabilities within a system or infrastructure to an attack. It allows the user to think like an attacker to identify the most attractive targets for an attack. By conducting a CARVER + Shock assessment of a food production facility or process, the user can determine the most vulnerable points in their infrastructure, and focus resources on protecting the most susceptible points in their system. Conduct vulnerability assessment; identify critical nodes, under take mitigation steps to reduce vulnerability.

CARVER is an acronym for the following six attributes used to evaluate the attractiveness of a target for attack:

- Criticality - measure of public health and economic impacts of an attack
- Accessibility - ability to physically access and egress from target
- Recuperability - ability of system to recover from an attack
- Vulnerability - ease of accomplishing attack
- Effect - amount of direct loss from an attack as measured by loss in production
- Recognizability - ease of identifying target

A seventh attribute, Shock, has been added to the original six to assess the combined health, economic and psychological impacts of an attack within the food industry.

The attractiveness of a target can then be ranked on a scale from one to ten on the basis of scales that have been developed for each of the seven attributes. Conditions that are associated with lower attractiveness (or lower vulnerability) are assigned lower values (e.g., 1 or 2), whereas, conditions associated with higher attractiveness as a target (or higher vulnerability) are assigned higher values (e.g., 9 or 10). Evaluating or scoring the

various elements of the food sector infrastructure of interest for each of the CARVER-Shock attributes can help identify where an attack is most likely to occur in that infrastructure. Federal agencies, such as FDA and the Food Safety and Inspection Service (FSIS) of the United States Department of Agriculture (USDA), have used this method to evaluate the potential vulnerabilities of farm-to-table supply chains of various food commodities. The method can also be used to assess the potential vulnerabilities of individual facilities or processes.

### **Table Top Exercise**

Joint industry/regulatory agency/health department/law enforcement officials participate in training exercises simulating an intentional product contamination event.