

Food and Agricultural Biosecurity is Everyone's Responsibility: Report from the Texas Summit Initiative

A. Gene Nelson, Professor and Head
Department of Agricultural Economics
Neville Clarke, Director
Institute for Countermeasures Against Agricultural Bioterrorism
Texas A&M University System

The Food and Agricultural Biosecurity Summit that was held May 6-7, 2002, in Austin, Texas, was planned in response to the events of September 11th and the ensuing anthrax attacks. This event is the latest in a series of programs conducted through the Texas Agricultural and Natural Resources Summit Initiative, an apolitical forum for the discussion of the critical issues affecting Texas' food, fiber, and natural resource systems. This paper describes the Summit Initiative and its role in public policy education. This is followed by a summary of the outcomes of the Biosecurity Summit with implications for public policy educational programming targeted at this complex set of homeland security issues.

The Texas Agricultural and Natural Resources Summit Initiative

The Texas Agricultural and Natural Resources Summit Initiative is an apolitical forum whose mission is to identify and resolve high-priority issues facing Texas agriculture and natural resources. The first-ever Texas Agricultural Summit was held on the Texas A&M University campus in 1993. Over 450 participants, representing agriculture, agribusiness, food industry, natural resources, consumers, government, academia, and the media, identified fifteen critical high-priority issues facing Texas agriculture. These issues were categorized in six themes:

- Environmental and Natural Resource Conflicts.
- Education and Information Needs of Consumers.
- Role of Government in Agriculture.
- Agriculture's Involvement in World Markets.
- Competitiveness of Agriculture.
- Agriculture's Political Influence and Leadership.

During the next year, several regional mini-summits were held to localize the issues and propose solutions. Since then, the Initiative has organized at least one summit per year. The issues addressed have included food quality and safety, environment and natural resource policy, the 1996 Farm Bill, rice, agricultural finance and risk management, forestry, biotechnology, and international trade. The last two summit events, held in 2001, were the Beef Industry Workshop and the Agricultural Policy Summit. As a result of the Summit Initiative, several thousand Texas citizens representing industry, agriculture, natural resources, and consumers have been brought together to identify, prioritize, and initiate work toward resolution of several critical public issues.

The leadership and vision for the Summit Initiative is provided by the Summit Executive Committee, which emphasizes the need to bring all stakeholders to the table to resolve issues. Coordination and staff support is provided by the agriculture programs of the Texas A&M University System and Texas Tech University. Financial support has been provided by registration fees and a variety of sponsors including

the Houston Livestock Show and Rodeo. Additional information about past summits and future plans is available at <http://agsummit.tamu.edu>.

The Summit Initiative as Public Policy Education

As the issues facing agriculture and natural resource stakeholders become more complex, new approaches are needed to bring together those who are likely to be affected. The Summit Initiative serves as a vehicle for bringing these diverse interests to the table to learn about, to discuss, and to begin the process of seeking resolution. The development of the Summit Initiative has paralleled the organization of the Agricultural Issues Center at the University of California - Davis (Nuckton, Carter, and Cleaves).

The Summit Initiative process, as illustrated in Chart 1, begins with the identification of the issue for the next summit. The issue, on which the summit will focus, is chosen by the Summit Executive Committee based on several considerations. These include opinions and values as expressed by interest groups, media coverage, inputs from the universities and state agencies, and the state of our scientific knowledge.

Once the issue has been identified, the next phase of the process is to compile what is known about the issue. This background information is summarized in an info-graphics style publication that is made available to the summit participants. Subject matter experts are identified to present information at the summit, and diverse participation is solicited to assure that all aspects of the issue are considered.

The summit event is usually planned for 1½ to 2 days with the time equally divided between presentations by the experts and discussion/work group sessions involving the participants. The active participation of those attending is crucial to the success of the process. The participants are divided into three to five workgroups, and each workgroup has a chair, who reports back to the total group in the closing session, an experienced facilitator, and a recorder, who prepares the input to the final report.

Following the summit, a report is prepared summarizing the findings and recommendations of the workgroups. Copies of this report are distributed to the participants and to key policy makers, agency heads, and industry leaders. The objective is to encourage groups to continue to work toward the resolution of the issue. Past experience also shows that the Summit Initiative has influenced the directions of university research, education, and extension programs.

Based on our experiences with the Texas Summit Initiative, the following appear to be the keys to the success that we have experienced:

- The summits have been planned to focus on timely high-priority issues.
- The organizers have worked to involve a broad spectrum of participants from all sides of the issue.
- The participants have been provided background information relevant to the issue.
- The summit events have been conducted as participatory working sessions with facilitators.

This process is not intended to resolve the issues. That would be an ideal, but not a realistic, expectation. As Nuckton, Carter, and Cleaves conclude, “The model succeeds, however, in bringing together [the] expertise to increase public knowledge regarding complex, multidimensional policy issues.” In other words, this process is public policy education.

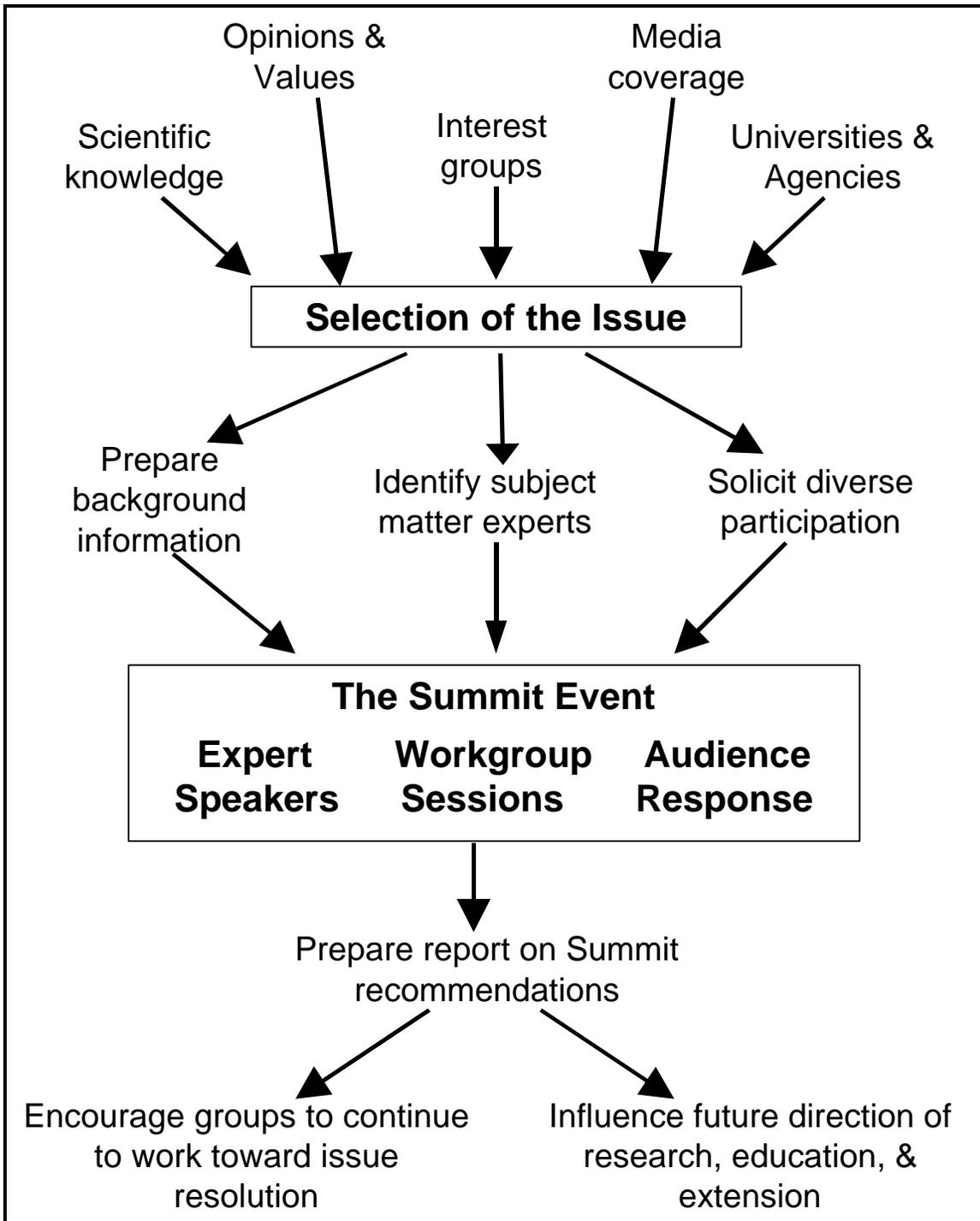


Chart 1. Addressing Critical Issues through the Summit Initiative Process.

Food and Agricultural Biosecurity Issues: Background for Planning the Summit

Threats to the food supply and agricultural production capacity are not new. Farmers and ranchers routinely deal with weather risks and the possibility of losses due to diseases and pests. The food processing and distribution industries have developed comprehensive security and contingency plans for accidental and intentional security breaches. The events of September 11 and the ensuing anthrax exposures, however, have added new concerns and risks and made us all more aware of the potential threats. With the second largest agricultural production sector in the nation and a large population of food consumers, Texas has a much at stake when it comes to biosecurity.

Concerns about bioterrorism have existed for several years. In the early 1990s, the full story on the former Soviet Union's efforts to develop offensive biological weapons became known. Their research and development program targeted agriculture and involved more than 10,000 people among the estimated 60,000 participating in the overall biological warfare weapons development program. Both plant and animal pathogens and food borne toxins were developed, using biotechnology to produce organisms with heightened virulence. Also, we have been watching the involvement of rogue nations and terrorist groups in bioterrorism and observed the use of biological agents in previous conflicts. September 11, however, heightened public awareness about the threat of terrorism and showed that terrorist groups have the ability to execute relatively sophisticated plans. The anthrax attack through the U.S. Postal Service demonstrated the will and ability to deliver biological agents. We now recognize that not only rogue nations, but also terrorist groups and even disgruntled individuals pose significant threats to the U.S. food and agriculture system.

How real is the threat, and how vulnerable is the U.S. food and agriculture system? Most analysts believe that terrorists and rogue nations see biological agents as an effective option. Biological agents fit the overall intent behind such attacks to create terror, resulting in loss of confidence in the food (and water) supply and the government system that ensures public health and safety. Many believe that the intentional use of biological agents in some part of the food and agriculture system is a moderately high probability. Assessing the risk involves consideration of the probability of occurrence and the potential consequence. A successful attack would produce a "high consequence" outcome. Even if the physical losses are not great, the goals of the terrorists could be achieved if the public loses confidence in the food supply resulting in economic losses.

The market reaction to a false alarm about an outbreak of foot-and-mouth disease (FMD) in Kansas clearly demonstrates the potential for economic damage. On March 12, 2002, lesions discovered in the mouths of eight cows at a sale barn in Kansas prompted fears of a foot-and-mouth disease outbreak.¹ Commodity markets and stock exchanges quickly responded to the rumors. Cattle futures and corn prices dropped sharply, along with share prices for several well-known food processing and retail firms. The FMD tests came back negative. The oral lesions apparently were caused by beards in hay fed to the cattle. The markets rebounded again, but the damage was done. Obviously, the time required for diagnostic processes and effectiveness of communications are critical variables affecting the public confidence in such situations.

¹ @griculture Online News, March 13, 2002. <http://www.agriculture.com/>

Planning the Summit

Planning for the Biosecurity Summit began in late 2001 with the formation of a planning committee. The initial goals were to evaluate the potential threats, consider the current state of preparedness, and develop recommendations for future actions to assure the safety and sustainability of the food supply and production capacity. The focus was on science-based methods to prevent and expeditiously deal with threats to agriculture and the food supply, whether they are introduced through malicious intent or by accident. The background publication is at <http://agsummit.tamu.edu/Biosecurity/biosecurity1.htm>.

This planning process culminated May 6-7, 2002, when the summit, “Food and Agricultural Biosecurity: Everyone’s Responsibility,” was held in Austin. More than 140 leaders from across the state participated in the general sessions and work group discussions. They included scientists and university representatives, policy makers, agency representatives, agricultural producers, food industry leaders, agribusiness managers, and consumers.

Informative sessions and interactive work groups involved the participants in learning about the threats facing agriculture and our food supply, and what measures are needed to keep them safe.

Informative Sessions: Hearing from the Experts

Presentations by scientists and other experts provided the information and established bases for the work group deliberations. The complete program is available at <http://agsummit.tamu.edu/Biosecurity/Biosec PROGRAM.pdf>

Texas Agriculture Commissioner Susan Combs opened the summit. She emphasized that the food supply system is critical to national security, and encouraged the participants to submit their ideas for assuring the safety of Texas agriculture and its food products.

Dr. Floyd Horn of the U.S. Office of Homeland Security keynoted the summit discussing the “Challenges for Security.” He pointed out that the fight to protect against biological warfare is just beginning. “Terrorists want to destroy our economy, and they have very few constraints about how they accomplish their goal.” Horn told the group that the agricultural community needs to be educated in “good, solid biosecurity practices based on good, solid research.”

Dr. Linda Logan, Executive Director of the Texas Animal Health Commission, summarized federal and state animal health emergency response plans to prevent the introduction of disease and control disease pathways. She emphasized the need for additional regulatory authority to respond to increasing biosecurity threats. A panel of experts from federal and state agencies, moderated by Dr. Logan, shared their concerns and risk assessments, the actions they have already taken, and needs for additional preparations.

Dr. Garry Adams, Associate Dean of the Texas A&M University College of Veterinary Medicine, shared his first-hand observations on the foot-and-mouth disease outbreak disaster in the United Kingdom. His areas of concern included the need for rapid diagnosis, sufficient and fully staffed lab and diagnostic facilities, quarantine and disposal logistics, and support for the psychological welfare of producers and field workers.

Dr. Jim Butler, Deputy Under Secretary for Marketing and Regulatory Programs, USDA, described the USDA response to the national threats to biosecurity. He discussed additional funding, border security, and emphasized Secretary of Agriculture Ann Veneman's ongoing support for strengthening our agricultural security.

A panel of representatives from the various components of food supply chain addressed biosecurity "from farm to fork." Their perspectives included crop and animal production, cattle feeding, food and meat processing, and distribution and retail.

Ms. Susan Pitman, Vice President of Porter-Novelli, pointed out the importance of effective communications with consumers and shared what her company is doing to address consumer concerns in the post-9/11 environment.

Dr. David Franz, Vice President of Southern Research Institute, addressed emerging technologies for dealing with bioterrorism. He summarized the history of biological terrorism and discussed the latest methods for detecting biological agents, whether introduced intentionally or accidentally.

Dr. Neville Clarke, Director, Institute for Countermeasures Against Agricultural Bioterrorism, explained the mission and goals of the Institute in providing a coordinated framework for research, extension, teaching, and service programs that contribute to preventing and minimizing the impact of bioterrorism activities directed at U.S. agriculture and the food supply.

These speakers and panel presentations set the stage for the work group discussions by clarifying the issues and suggesting needed actions.

Interactive Work Group Sessions: Process and Findings

The summit participants were assigned to one of three work groups to develop recommended strategies in response to the food and agricultural biosecurity issues. Two of the groups discussed the issues from the perspective of the animal product supply chain, and the third group from the perspective of the crop product supply chain. The general topics for each of these work groups were: (1) prevention, preparation, and policy, (2) response, mitigation, and recovery, (3) communications, and (4) research and education.

Knowledgeable chairs, facilitators, and recorders supported each work group and were responsible for convening the meetings, monitoring the discussions, recording the comments, and reporting the results. Each work group began by identifying issues related to their respective general topic area, guiding the discussion with open-ended questions. Then, for each of the high-priority issues, the work groups developed recommendations to resolve the issue or address the concerns. During the closing session of the summit, the work group chairs summarized the major issues and recommendations for their respective groups.

The recommendations from the work groups were compiled and summarized in a final report for dissemination key policy makers, agency heads, and industry leaders. A summary of the recommendations is presented in the next section followed by a discussion of the implications for public policy education.

Recommendations from the Biosecurity Summit

The work groups produced an extensive list of recommendations. The following key elements summarize the recommendations of the three work groups. For the full report with the detailed recommendations, go to <http://agsummit.tamu.edu/Biosecurity/biosecurity1.htm>.

Prevention, Preparation & Policy

- 1. Assess and prioritize the threats and risks.** State and federal regulatory agencies, working with universities and the private sector should develop methods to identify the potential threats—who, what agents, and what introduction methods are likely to be used to inflict damage.
- 2. Develop contingency plans and strategies for prevention.** Based on risk assessments and priorities, comprehensive contingency planning should consider a wide variety of different types of events. Explicit plans for crop emergency response (similar to those for livestock in the State Foreign Animal Disease Plan) are needed. These plans should also include expanding the Governor's Task Force for Homeland Security to include food and agriculture.
- 3. Emphasize improved detection and adopt latest surveillance methods.** State and federal regulatory agencies must improve surveillance and early detection of exotic plant, animal, and food pathogens at borders, ports, pastures and fields, and in all parts of the food supply chain. Adopting the latest technology and improving current technology is necessary to allow for decentralized (on-site) application.
- 4. Conduct simulated outbreak exercises.** State and federal agencies should continue mock outbreak exercises to further develop, refine, and practice the integrated response of multiple agencies in reacting to an attack. The governor should ask Emergency Response Teams to organize an exercise simulating a bioterrorist attack on crop agriculture in Texas. Follow-up actions on the previous FMD exercise should be implemented.
- 5. Develop legislation to fill gaps in regulatory powers needed for effective containment and interdiction.** State agricultural and emergency response agencies should work with the Texas Legislature to draft legislation to cover the authority needed to improve prevention and response to acts of agricultural bioterrorism. Areas for consideration include quarantine powers (absolute control of the movement of individuals, equipment, crops, and animals within and around quarantine zones), indemnity, compensation, and criminal penalties.

Response, Mitigation & Recovery

- 6. Improve coordination and decision-making.** State and federal agencies responsible for response, mitigation, and recovery should develop incident command structures, update communication methods and decision-making trees, and incorporate them into response plans. These efforts will help prevent operational gridlock at local, state, and national levels. Local emergency, medical, and law enforcement officials must also be integrated into these plans. Since state-of-the-art diagnostic capabilities with expanded resources will be essential to respond to a major outbreak, systems should be in place for networking laboratory resources for rapid response.

- 7. Develop new containment methods.** State and federal regulatory agencies should develop, test, and use new methods for containing exposed livestock and crops following a disease outbreak. This should include new, practical immunization methods and research on resistance to specific agents. Alternatives to depopulation should be developed and implemented.

Communications

- 8. Raise awareness of potential threats.** Farm and commodity organizations, state and federal government agencies, the Texas Cooperative Extension, the Texas A&M College of Veterinary Medicine, and other higher-education institutions (working closely with other agencies) should conduct active programs to create awareness of food agricultural biosecurity threats and to overcome complacency. Communications should engage producers, processors, and others along the food supply chain to provide information for response planning within individual businesses. Local government officials must also be informed to ensure that communities and individuals take an integrated approach to counter-terrorism.
- 9. Promote public confidence through science-based education and information.** State and federal government and related parts of Texas' higher education system should develop a communication plan that enhances public awareness. An informed citizenry will be prepared to respond in a rational manner to threats and attacks on the nation's food supply. Communications should ensure that public confidence in its food supply is sustained during and after acts of bioterrorism.

Research and Education

- 10. Encourage cooperation among institutions.** Promote cooperation and partnerships among Texas universities and agencies to optimize resources for addressing research, planning, education, and communication needed to respond to bioterrorism. Encourage linkages between relevant disciplines involved in human, plant, and animal health systems to ensure that a full spectrum of research, development, and education is effectively focused on these threats. Establish Texas institutions as centers of national and international excellence in biosecurity.
- 11. Incorporate biosecurity into higher-education curricula.** All higher-education institutions should be encouraged to revise their curricula to incorporate food and agricultural biosecurity awareness. This concerted effort should be designed so that graduates in food, agriculture, and natural resources are prepared to prevent and respond to intentional attacks of food and agricultural bioterrorism.
- 12. Prioritize and fund research to develop improved biosecurity tools.** Prioritize biosecurity research needs based not only on national perspectives, but also specifically considering the needs of Texas food and agricultural producers. Encourage the Texas Legislature to fund a statewide initiative in biotechnology and information technology research to develop the next generation of biosecurity tools.

These twelve elements provide a framework for developing a comprehensive biosecurity plan for Texas food and agriculture industries. Additional work is needed to refine the recommendations and involve others.

Implications for Educational Programming

As we learned from the summit, public policy education in the area of biosecurity involves some special challenges. As with most public policy issues, biosecurity includes some controversial aspects. A couple of examples are private rights versus public interests and appropriate compensation/indemnity for losses. This issue area, however, has some other challenging implications for educational programming.

- 1. Overcome the natural tendency to ignore risk.** We don't like to think about the bad things that can happen. This is normal psychological response. The challenge facing policy educators however, is that we have a responsibility to remind policymakers, opinion leaders, and the general public that terrorism has introduced new risks (and reminded us of some old risks) and emphasized the need to develop contingency plans for dealing with them.
- 2. Create awareness without losing public confidence.** Communication about the risks must be tempered. The challenge is to create increased public awareness about the potential threats without a loss of confidence in safety of the food supply. The presentation of information about biosecurity issues must be balanced emphasizing preparedness along with the threats. While creating greater awareness about the risks and the potential impacts, we must also provide reassurance regarding the planning and response systems that are in place.
- 3. Keep sensitive information away from the "bad guys."** Another challenge is the management of information. There are some points that should not be discussed in an open forum. Information about techniques that could be used to cause damage and the vulnerabilities of our systems could be used against us. Caution is needed to control information that could be useful to the enemy.
- 4. Use a multidisciplinary approach to educational programming about biosecurity.** A wide range of expertise must be engaged, including biotechnology for diagnosis, epidemiology, animal health, human medicine, emergency preparedness, logistics, communications, and psychology for dealing with loss. The challenge is to bring together these varied areas of expertise and to tell a coherent story about our state of preparedness.
- 5. Emphasize the need for economic analysis to assess and prioritize the various risks.** Risk assessment requires consideration of both the probability of occurrence and the impact if a particular event should occur. Economic analyses are needed to estimate those potential impacts. Events that result in a loss of consumer confidence will have significant economic implications that will stretch our analytical tools.
- 6. Enhance coordination among the various federal, state, and local agencies.** Such coordination is critical to the successful containment of an outbreak. We should not assume that these agencies are cooperating and working together. The challenge for public policy education is to bring the representatives of these agencies together to discuss their respective roles and responsibilities. This is critical for assuring that appropriate plans, systems, laws, and coordination is in place.

7. **Promote the use of simulated attack exercises as learning experiences.** The challenge is to test the state of preparedness by working with local, state, and federal agencies to conduct mock attack exercises. Organizing an exercise to simulate a bioterrorist attack will demonstrate the effectiveness of current response systems and encourage the development of improved systems for coordinating multiple agencies.
8. **Evaluate program effectiveness using appropriate indicators.** Evaluating public policy education related to biosecurity will be challenging because of the complexity of the issues. Some possible indicators of program success include:
- Greater public awareness.
 - Development of state and local response plans and testing of those plans.
 - Higher levels of industry security.
 - Public policy that emphasizes preparedness and quick response.
- The challenge is that these indicators are not easily measured.

Conclusion

We learned during the summit that a successful attack on any part of the food and agriculture complex will have significant effects throughout the system. We also learned that terrorism is not a short-term problem. A sustained effort will be required over time and on several fronts. To win the war, two internal enemies must be overcome: complacency and ignorance. We must remain alert to possible threats. We must devote our attention not only to immediate security, but on developing new systems for future prevention and mitigation. Our goal is to make the food and agriculture system a less attractive target for terrorists, rogue nations, or individuals.

The stakes are high. Public policy educators have a critical role to play in keeping the industry, government, and the public focused on the risks and the solutions—developing appropriate countermeasures without a loss of public confidence in the system. The threat to the safety and security of our food supply affects us all, making vigilance against bioterrorism everyone’s responsibility.

References:

Nuckton, Carole, Harold O. Carter, and David A. Cleaves, “Addressing Mega-Issues of the ‘90s,” *Journal of Extension* 30 (4), Winter 1992, 6 pages. <http://www.joe.org/joe/1992winter/a1.html>.

Texas Agricultural and Natural Resources Summit Initiative, *Biosecurity: Safeguarding Our Agriculture and Food Supply*, background publication, produced by Texas A&M Agricultural Communications, April 2002. http://agsummit.tamu.edu/Biosecurity/biosecurity_background.pdf.

Texas Agricultural and Natural Resources Summit Initiative, *Biosecurity: Safeguarding Our Agriculture and Food Supply: Summary Report and Recommendations*, produced by Texas A&M Agricultural Communications, July 2002. http://agsummit.tamu.edu/Biosecurity/biosecurity_final.pdf.