

Center for Agricultural Policy and Trade Studies
North Dakota State University

NEWSLETTER

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Conference on Bioterrorism and Food Security

A conference titled **Bioterrorism and Food Security: Issues and Challenges** was held on October 28th and 29th at the Ramada Plaza Suites and Conference Center in Fargo, North Dakota. The conference was organized by the Center for Agricultural Policy and Trade Studies and the Great Plains Institute of Food Safety, North Dakota State University. Sponsors of the conference were the North Dakota Agricultural Experiment Station and the Department of Agribusiness and Applied Economics. Speakers included U.S. Senator Byron Dorgan, U.S. Representative Earl Pomeroy, Lieutenant Governor Jack Dalrymple, government officials, and members of academia and private industry. The purpose of this conference was to address emerging issues related to bioterrorism and food security affecting U.S. agricultural production, processing, and trade, and to discuss strategies to prevent intentional contamination and attacks on U.S. agriculture. The following is a brief summary of presentations in the conference.

Won W. Koo
Professor and Director
Chair, Conference Organizing Committee

Keynote Addresses

The conference began Monday, October 28th, with welcoming remarks from NDSU president Joseph Chapman, followed by a keynote address from U.S. Senator for North Dakota Byron Dorgan. In his speech, Dorgan stressed that bioterrorism and food security is very real and important. He noted that there are two sets of issues with respect to food security: health issues and economic issues. The dramatic drop in beef sales in Japan following an outbreak of mad cow disease is an example of the type of economic disruption that can occur. Dorgan mentioned that the senate passed and the president signed the Public Health Security and Preparedness Act of 2002, which includes provisions to protect the U.S. food supply. The purpose of this legislation is to significantly improve the country's ability to respond effectively and quickly to bioterrorist threats and other public health emergencies. Dorgan noted that some progress has been made, but more emphasis within the government still needs to be placed on food security. He stated that U.S. inspections of food imports is an area of concern, noting that while 5.7 million containers come into U.S. ports each year, only 100 thousand are inspected.



Dr. Floyd Horn and U.S. Senator Byron Dorgan prepare to give the keynote addresses.

An address by Floyd Horn followed the remarks from Senator Dorgan. Before he returned to the USDA, Horn served as the Director of Food, Agriculture, and Water Security at the White House Office of Homeland Security. Horn argued that U.S. agriculture is vulnerable to attack because it is large and complex, highly concentrated, easily accessible, limited in genetic diversity, and susceptible to foreign disease (especially livestock). He also noted that terrorists want to attack our economy, of which agriculture forms a major part.

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Horn pointed out that the threat is real since many countries have agricultural biowarfare capability, and substate groups (including al Qaeda) have attempted to acquire biowarfare capability. Proliferation to rogue countries is a concern, he noted, and is being addressed through the Cooperation Threat Reduction Program. Horn concluded by stating that the terrorist attacks of September 11, 2001, have sharpened the focus of homeland security in the U.S. government, and that food and agriculture are key components of this agenda. He stressed that challenges remain in areas of deterrence, prevention, and domestic preparedness. The Office of Homeland Security, he noted, is enabling new relationships between key interests in all levels of government and also in private sectors.

Risk of Bioterrorism: Issues and Challenges

Following the keynote addresses by Dorgan and Horn, the first conference session began with speeches by Robert Trotter of the U.S. Customs Service and James Schaub of the USDA. Trotter is the Director of Field Operations at the Eastern Texas Customs Management Center, and he discussed two of the U.S. Customs Service's key programs: the Customs Trade Partnership Against Terrorism (C-TPAT) and the Container Security Initiative (CSI). The purpose of C-TPAT is to initiate cooperation between Customs and industry leaders to ensure national security at the U.S. border and beyond, to strengthen the supply chain, to exchange ideas, and to facilitate legitimate trade. CSI was launched in January 2002 to prevent global containerized cargo from being exploited by terrorists. The key elements of CSI include establishing criteria for identifying high-risk containers, pre-screening containers at the earliest possible point, using technology to pre-screen high-risk containers, and developing secure and "smart" containers.

James Schaub is Acting Director of the Office of Risk Assessment and Cost-Benefit Analysis and Senior Economist in the Office of the Chief Economist at the USDA. He discussed the impacts of bioterrorism, noting that economic impacts include direct losses of crops, livestock, and assets; secondary losses in upstream and downstream markets; lost export markets; significant price effects; and a reduction of economic growth caused from a reallocation of resources. Other effects, he noted, include environmental problems and social and political impacts such as reduced confidence in government, reduced confidence in food safety, and social disruption resulting from fear and xenophobia. Schaub commented that there is potential for risk at each stage of the food supply chain (inputs, production, processing, storage and distribution, and retail) and that we must attempt to determine the risk and consequence of a bioterrorist attack at each stage.

Agricultural Industry Perspectives

The first of two afternoon sessions on the first day of the conference included perspectives from the agricultural industry. The first presentation was given by Jenny Scott, Senior Director in the Office of Food Safety Programs at the National Food Processors Association (NFPA). Scott described the food industry's response to the difficulties in ensuring food security and safety. She stressed that the industry takes food security very seriously, but also that ensuring security should not result in business paralysis. The NFPA has focused its efforts on personnel (increased screening and supervision), products (controls on access during production and transportation), and property (stronger barriers to possible intruders). They have assisted the industry in organizing and conducting food security assessments and implementing preventative practices and countermeasures to terrorist events against the food industry.

Wade Moser, Executive Vice President for the North Dakota Stockmen's Association (NDSA), followed with a presentation from the perspective of livestock producers. Moser presented six policies supported by the NDSA: any malicious act against agriculture should be a felony; disease surveillance needs to be improved; federal labs need remodeling, as research facilities are deteriorating and not capable of doing what is needed; further risk assessment is necessary, including a review of risk assessments of export countries; country of origin labeling should be supported; and the Ag Innovation Center in North Dakota should move forward. Because the agricultural industry in North Dakota is so spread out, Moser stated his belief that it could be at risk because we do not see everything that is going on, and diseases could be easily spread. Moser noted that the livestock industry must overcome its distrust of government, and the government must understand the livestock industry better; for example, the government must understand that it is impossible for the livestock industry to pass on costs. Moser also mentioned that the livestock industry is more likely to work with local government.

Becky Koch of the Extension Disaster Education Network (EDEN) gave the final presentation of the session. EDEN is a collaborative multi-state effort by Extension Services across the country. The mission of EDEN is to reduce the impact of disaster through coordinated inter-disciplinary and multi-state research. EDEN's goals are to train producers, families, volunteers, emergency responders, and others; to inventory resources and research in the land-grant system; to share and develop educational materials; and to provide local coordination with disaster agencies. In July 2002, EDEN was provided funds with the focus to be on plant biosecurity. The initial effort of the project involves needs assessments of County Extension educators, agricultural producers, and general consumers.



Dr. Won Koo (Director of CAPTS), Dr. Patricia Jensen (NDSU Vice President for Agriculture), and North Dakota Lieutenant Governor Jac Dalrymple, who spoke at dinner the first evening of the conference.

Government Perspectives

The final session on October 28th included perspectives from government officials. The first presentation was given by Larry Shireley, the State Epidemiologist in the North Dakota Department of Health, as well as the Director of the Division for Disease Control in North Dakota. The North Dakota Department of Health was recently awarded approximately \$6.9 million by the Centers for Disease Control and Prevention and the Health Resources Services Administration for planning countermeasures and responding to acts of bioterrorism. Shireley provided an overview of the planning and response activities being coordinated by the North Dakota Department of Health. Included among these tasks are developing plans for eight North Dakota regions, creating a statewide advisory committee, developing a pharmaceutical stockpile program for North Dakota, increasing surveillance, strengthening the ability to rapidly investigate and respond to outbreaks of disease, improving labs, ensuring effective communication, providing health risk information, and providing appropriate education and training.

The next presentation was given by Nader Ismail. Ismail works for the Food Safety and Inspection Service (FSIS) at the USDA. The mission of FSIS is to protect consumers by ensuring that meat, poultry, and egg products are safe, wholesome, and accurately labeled. One way in which the FSIS has responded to the increased security concerns has been to place inspectors on heightened alert at ports-of-entry and in meat and poultry plants. Other measures in place to strengthen U.S. food safety systems include the Food Threat Preparedness Network (PrepNet), which Ismail noted focuses on preventative activities and rapid responses to problems, and the FSIS Food Biosecurity Action Team (F-BAT). F-BAT, Ismail stated, coordinates and facilitates all activities pertaining to biosecurity, countering terrorism, and emergency preparedness within FSIS. Ismail also discussed the USDA Homeland Security Council, which was established to work with the Office of Homeland Security and other departments. This council has three sub-councils: Protection of the Food Supply and Agriculture Production (PFSAP), Protection of USDA Facilities and other Infrastructure, and Protection of USDA Staff/Emergency Preparedness.

The final speech of the first day was given by Joan Sebenaler, the Assistant Port Director of Trade for the U.S. Customs Service at Pembina, North Dakota. Sebenaler shared experiences from her work for the Customs Service. She stated that Customs is the first line of defense and that their goal is to keep adulterated food out, while trying to facilitate legitimate trade. She stressed that coordination with specialists is important.

Impacts on the U.S. Agricultural Sector and Exports

The first session on Tuesday, October 29th, included discussion of the impacts of bioterrorism on the U.S. agricultural sector. The first presenter was Daryll Ray, followed by David Blandford and North Dakota Agricultural Commissioner Roger Johnson. Ray is a professor and Director of the Agricultural Policy Analysis Center at the University of

Tennessee. He discussed the impacts of a hypothetical outbreak of foot and mouth disease in the United States. Ray noted that foot and mouth disease is easy for a terrorist to obtain, spreads quickly, is difficult to control, and would have significant psychological and economic impacts on the United States. The hypothetical target Ray considered included Kansas, Oklahoma, and Texas, which would affect 25.4 million head of cattle. There would be an immediate impact on U.S. export markets. The loss in exports could exceed \$5 billion if exports were totally shut down. Many producers could be left with empty barns, as 6.35 million head of cattle could be slaughtered. Indemnity costs, at \$600 per head, could total \$3.81 billion. Other costs include losses in upstream and downstream industries. The meatpacking industry could lose \$3.8 billion under this hypothetical outbreak, and the corn market would also be significantly affected. There would be huge losses in jobs in the United States, and prices would fall due to a drop in demand. Ray concluded that one foot and mouth disease attack in one part of the country could have an immediate direct impact of \$10 billion, which is about one-fourth of total net farm income in the country. Indirect impacts could be tens of billions of dollars.

Blandford is a professor and chair of the Department of Agricultural Economics and Rural Sociology at Pennsylvania State University. He stated his belief that economic disruption and loss is potentially the greatest threat of a bioterrorist attack on our food system, and that the economic risk is greatest to animal agriculture through disease. The risk created by contaminated imports, Blandford stated, is less than the risk from direct introduction, and large expenditures on import inspections are unlikely to be cost-effective. He stated it would be more cost-effective to increase our ability to deal with the problem. Private companies, he also noted, have the most to lose and will respond accordingly.



U.S. Representative Earl Pomeroy, who spoke at the start of the second day, Dr. David Blandford, and Dr. Daryll Ray.

Roger Johnson stressed the importance of agriculture in North Dakota and emphasized that a bioterrorist attack could have a huge impact on North Dakota agriculture and the economy. Although the risk of terrorist attack in the state may seem low, Johnson noted that a few attributes of North Dakota agriculture do make the state vulnerable, and terrorists may attack where it is not expected. Johnson stressed the importance of communication and coordination. He stated his fear that we will focus too much on organization and not enough on communication and coordination.

Policy Alternatives for Food Security and Bioterrorism

The second session of the day featured another presentation from Robert Trotter and presentations from Robert Young and David White. Young is Co-Director of the Food and Agricultural Policy Research Institute (FAPRI) at the University of Missouri, and White is a research microbiologist with the Center for Veterinary Medicine at the Food and Drug Administration. Trotter went into further discussion of U.S. Customs policies. He discussed how Customs targets individuals and attempts to hinder terrorists from entering the country. U.S. Customs is now training officers who normally search for narcotics to look for terrorists. Customs is also spending money to update and increase the speed of labs, and they are focusing efforts on radiation detection so they can inspect all shipments for radiation.

Young stated that for a bioterrorist attack to disrupt the United States, it needs to be doable, it needs to have broad dispersion, it needs to cause great economic hardship, and it needs to have long-lasting effects. An outbreak of an animal pathogen like foot and mouth disease meets these criteria. An outbreak of a crop disease is also possible due to a lack of genetic diversity in the country. An important policy concern, Young noted, is how we indemnify

producers, especially for some illnesses where it takes time to confirm the disease. The USDA does have access to some funds from the Commodity Credit Corporation for indemnification, but access to these funds is not easy. The costs to government of indemnification could be huge, as illustrated by the recent outbreaks in the United Kingdom. Also, Young noted, there is a question of who does and who does not receive compensation. For example, the tourism industry in the United Kingdom lost \$4 billion due to the outbreaks. Other policy concerns include what happens when meat prices go into a free fall and how the United States regains export markets after an outbreak. Young also suggested that livestock producers need to talk with Canadians about animal identification, that there should be a secretarial fund under the Secretary of Agriculture for an occasion when an outbreak occurs, and that we need to think about how we will communicate to the public if an outbreak occurs.

White discussed the food security perspective of antimicrobial resistance. He described how foodborne illnesses have a major public health impact in the United States and around the world. The emergence of infectious bacteria resistant to many, and in some cases all, effective antimicrobials, he stated, is one of the most serious public health dilemmas ever faced. White also discussed policies in effect for the surveillance of foodborne illness, but noted that surveillance is complicated by a number of factors.

Panel Discussion: Charting a Course

The final session of the conference was a discussion among panel members who included Douglas Friez, Homeland Security Coordinator/Emergency Management Director for the state of North Dakota; Lisa Nolan, Director of the Great Plains Institute of Food Safety at NDSU; Tim Sellnow, Professor of Communication at NDSU; Douglas Freeman, Professor and Chair of the Department of Veterinary and Microbiological Sciences at NDSU; Roger Johnson, Agricultural Commissioner for North Dakota; and David White, microbiologist in the Food and Drug Administration. White stated his belief that food contamination may not be the target of a bioterrorist attack because of the relatively small impact. Sellnow discussed the important role that the media plays. Johnson noted that responding to bioterrorism will require early detection, effective control, a free flow of accurate information, and complete cooperation, and that agencies may need to update statutory authorities. Friez stated there are some plans in existence, but he stressed the importance of communication and building relationships and the need to plan, train, and exercise.

The Free Trade Area of the Americas: Progress and Effects on U.S. Agricultural Trade

Jeremy Mattson and Won W. Koo

On November 1st of this year, trade ministers of the 34 democratic countries in the Western Hemisphere met in Ecuador to advance negotiations for the Free Trade Area of the Americas (FTAA). Negotiations for the FTAA began when the heads of state met during the 1994 Summit of Americas. Deadlines have been set to complete negotiations by January 2005 and to implement the agreement by December 2005. Since the initial Summit of the Americas in 1994, negotiations for the FTAA have continued at seven trade ministerial meetings, including the most recent in Ecuador, and at the second and third Summits of the Americas. The agreement would eliminate tariffs and create common trade and investment rules among the Western Hemisphere countries. A draft text of the FTAA agreement was made available to the public on July 3, 2001, and a second draft was released at the November 1, 2002 meeting.

During the 1998 Santiago Summit of the Americas, nine negotiating groups were established: market access (which includes non-agricultural tariffs and non-tariff barriers, rules of origin, customs procedures, standards, and safeguards); agriculture (which includes agricultural tariffs and non-tariff barriers, agricultural subsidies and other trade-distorting practices, and sanitary and phytosanitary procedures); services; investment; government procurement; intellectual property; subsidies, antidumping, and countervailing duties; competition policy; and dispute settlement. These negotiating groups meet regularly throughout the year.

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The trade bill signed by President Bush on August 6th of this year could significantly improve the possibility of an FTAA that includes the United States becoming a reality. This legislation gives the president trade promotion authority, also known as fast track, which allows the president to negotiate trade agreements that Congress can either approve or reject, but not amend. Trade promotion authority makes it easier for the administration to negotiate trade agreements, and one of President Bush's goals is to create an FTAA which includes every country in the Western Hemisphere except Cuba by January 2005. There is growing opposition to the agreement, however, in Brazil. Brazil has warned it will not join unless the United States makes concessions on agricultural subsidies. The United States may need to make large concessions on sugar, citrus, and steel in order to reach an agreement acceptable to Brazil.

Canada and Mexico are the major U.S. trading partners in the Western Hemisphere, but the United States also trades with a number of other countries in the hemisphere. Table 1 shows U.S. agricultural exports and imports with Western Hemisphere countries in 2001. The last column shows the percentage of U.S. imports from each country that consists of non-competitive agriculture. These are imports of products not produced in the United States, such as coffee and bananas. In 2001, the United States had a \$1.9 billion agricultural trade deficit in the hemisphere.

The FTAA could have mixed results for U.S. agriculture. Some agricultural industries may benefit from opened foreign markets, while others may be harmed as cheaper imports could displace domestic production. A reduction in trade

Table 1. 2001 U.S. Agricultural Trade with Western Hemisphere Countries

<i>U.S. Agricultural Exports</i>			<i>U.S. Agricultural Imports</i>			
Destination	2001 Exports (1,000 dollars)	% change from 2000	Source	2001 Imports (1,000 dollars)	% change from 2000	% non- competitive imports
Americas Total	19,860,959	9%	Americas Total	21,751,992	4%	16%
Canada	8,121,418	6%	Canada	9,863,145	14%	7%
Mexico	7,404,481	16%	Mexico	5,264,849	4%	6%
Dominican Republic	497,933	-2%	Chile	1,022,782	0%	1%
Colombia	452,152	9%	Brazil	999,076	-13%	30%
Venezuela	409,081	1%	Colombia	925,948	-18%	55%
Guatemala	293,994	14%	Costa Rica	804,490	-1%	54%
El Salvador	241,061	12%	Argentina	609,677	-9%	11%
Brazil	221,065	-16%	Guatemala	609,093	-14%	69%
Peru	212,494	25%	Ecuador	484,521	7%	65%
Costa Rica	199,010	7%	Dominican Republic	254,221	4%	18%
Honduras	198,075	2%	Honduras	237,474	-5%	63%
Jamaica	180,566	5%	Peru	206,232	5%	29%
Haiti	179,002	-1%	Nicaragua	92,445	-15%	48%
Panama	176,765	3%	El Salvador	87,319	-48%	42%
The Bahamas	126,908	0%	Uruguay	58,525	-9%	1%
Argentina	116,034	-23%	Jamaica	52,384	8%	14%
Trinidad & Tobago	114,032	8%	Belize	39,108	20%	0%
Ecuador	109,263	8%	Panama	39,030	-22%	38%
Nicaragua	102,754	39%	Venezuela	33,967	-38%	26%

barriers affects trade through trade creation, trade diversion, and income effects. Trade creation occurs when trade volume between two countries increases as a result of the displacement of domestic production. Trade diversion occurs when increases in trade with one country displaces trade with third-party countries that are not part of the trade agreement.

Analysis was conducted to estimate the trade creation and trade diversion effects of tariff removal under the FTAA on U.S. trade with select Latin American countries. The results are shown in Table 2. Trade expansion is the summation of trade creation and trade diversion effects. Trade creation effects are generally higher for U.S. exports to these countries than they are for U.S. imports because foreign tariffs are generally higher than U.S. tariffs, and foreign food consumption is more responsive to price than is U.S. food consumption. The trade diversion effect,

however, is larger for U.S. imports than it is for U.S. exports. Trade diversion effects for exports are relatively small because 70-90 percent of agricultural imports by the other Western Hemisphere countries are already from FTAA countries, whereas about 55 percent of U.S. agricultural imports are from FTAA countries. This analysis does not consider income effects or reductions in non-tariff barriers that may also have a positive effect on trade. The FTAA could have a positive effect on income in Latin America countries, which could cause a greater increase in U.S. exports as these countries increase their purchasing power.

Table 2. Trade Creation and Trade Diversion Effects of FTAA on U.S. Trade with Select Latin American Countries

<i>U.S. Exports</i> (million U.S. dollars)					
	2001 U.S. Exports	Trade Creation	Trade Diversion	Trade Expansion	Percent Increase
Brazil	221.1	30.3	7.4	37.7	17%
Colombia	452.2	283.3	49.4	332.7	74%
Guatemala	294.0	24.0	2.1	26.1	9%
Venezuela	409.1	67.5	18.8	86.4	21%
El Salvador	241.1	23.9	2.4	26.4	11%
Panama	176.8	22.0	4.2	26.2	15%
Costa Rica	199.0	15.4	1.5	16.9	9%
Argentina	116.0	11.9	3.1	15.0	13%
Eight-country total	2,109.2	478.5	89.0	567.5	26.9%
<i>U.S. Imports</i> (million U.S. dollars)					
	2001 U.S. Imports	Trade Creation	Trade Diversion	Trade Expansion	Percent Increase
Brazil	999.1	85.2	38.1	123.3	12%
Colombia	925.9	30.7	13.7	44.4	5%
Chile	1,022.8	14.4	6.4	20.8	2%
Guatemala	609.1	67.0	30.0	97.0	16%
Dominican Republic	254.2	48.2	21.5	69.7	27%
Ecuador	484.5	6.3	2.8	9.1	2%
Costa Rica	804.5	13.4	6.0	19.4	2%
Argentina	609.7	16.8	7.5	24.3	4%

There could be increases of U.S. exports of corn, beef, pork, rice, as well as small increases in wheat, soybean, and soybean meal exports under the FTAA. There could also be significant imports of products such as fruit and vegetable juice from Argentina, Brazil, and Chile; grapes from Chile and Argentina; and dates, figs, and pineapples from Chile and Brazil. Also, sugar is a major commodity in a number of Latin American countries, and if producers in countries like Brazil, Guatemala, or the Dominican Republic can produce sugar at a lower cost, U.S. imports of sugar could increase substantially under trade liberalization.

There may be some additional trade diversion effects for U.S. exports that are not captured in this analysis. There are a number of free trade agreements of different types already existing in the Western Hemisphere. For example, the Mercosur agreement includes Brazil, Argentina, Paraguay, and Uruguay. The United States encounters tariffs in exporting to these countries that member countries do not face; for example, Argentina has an advantage in exporting wheat and other commodities to Brazil. Eliminating Mercosur and the numerous other trade agreements and replacing them with the hemisphere-wide FTAA will remove these tariff differentials. U.S. exporters that are currently outsiders in many of the free trade agreements will benefit.

A few other areas need further consideration. Future production levels in Latin American countries will affect U.S. exports to these countries. Production of corn and soybeans in Argentina and Brazil has increased substantially during the last decade. Soybean production in these two countries has more than doubled in the last ten years. Wheat production in Argentina has also increased during this time period. If these countries increase production as well as exports, it may be more difficult for the United States to increase market share in other Latin American countries.

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CONFERENCE ANNOUNCEMENT

The Center for Agricultural Policy and Trade Studies is organizing a conference titled **Agricultural Competitiveness and World Trade Liberalization: Implications of the WTO, FTAA, and the 2002 Farm Bill**, which will be held on May 22-23, 2003, at the Holiday Inn Convention Center in Fargo, North Dakota. Major themes of this conference are (1) U.S. agricultural competitiveness under the 2002 Farm Bill and its impacts on world agricultural trade, (2) progress of FTAA and WTO negotiations and potential impacts on U.S. agricultural exports, (3) processed food trade and foreign direct investment, and (4) changes in Chinese agriculture after WTO membership and its impacts on world agriculture.

Be sure to make your calender for this conference!