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Policies to Protect Food Safety and Animal Health

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Protecting food safety and animal health is critical for maintaining public health, consumer confidence, and profitability of animal agriculture. Several developments in North American animal agriculture have an increasing impact on food safety and animal disease risks and the methods used to manage these risks.

Demand for animal food production is increasing as world population increases and developing countries have more disposable income. Increased production to meet this demand has led to more confined, concentrated and intensified systems all over the world. In North America, this intensification is regional, especially with poultry, swine and cattle feedlots. Dairies are becoming fewer and larger and are concentrating in geographic areas not traditional to dairy production. As animal production costs increase without assurances of sector profitability, enterprise numbers continue to decline.

Driving forces in food safety and animal health across North America include questions about feed additives, biotechnology, foodborne diseases, links between animal and human diseases, and traceability. Animal health and food safety issues are closely related, yet in some cases require separate strategies. Even if there are similarities in the approaches that address animal diseases and food safety, it is important to recognize that objectives and desired outcomes are often different. Policies and practices meant to protect domestic food supplies and herd/flock health (breeding stock and egg/chick quarantines) may serve as "trade barriers," though they are not intended as such.

Food Safety Dimensions

Foodborne microbial pathogens, which may result in human illnesses, will continue to be the major focus of food safety concerns. Estimates of the costs of human illnesses and costs to the food industry attributed to foodborne pathogens are well-documented (Buzby et al., 1996; Crutchfield & Allhouse, 1998; Goodwin & Shiptsova, 2002; Unnevehr, 2003). Detailed treatment of this topic is beyond the scope of this paper, the purpose of which is to raise both new and ongoing issues related to food safety and animal health and the interface of the two. This paper draws on a much longer report, *The Future of Animal Agriculture in North America* (Farm Foundation, 2006).

Food safety and assuring consumers their food is safe will continue to be a challenge for the industry. Private sector efforts to minimize risks of recalls and protect brand equity are part of an effective food safety strategy. The processing sectors have adopted process control strategies (Hazard Analysis and Critical Control Point or HACCP) to reduce the risks of microbial contamination during slaughter and processing. The production sector is adopting quality assurance programs to address specific product quality and food safety issues, such as measures to reduce the presence of harmful microbes in the live animal before transport and slaughter.

The incidences of *bovine spongiform encephalopathy* (BSE) and *E. coli* contamination have brought demands for adoption of traceability and quality assurance systems to manage the animal products supply chain. The dominance of international food retailers has been a key factor in wide use of such systems, even when not demanded by regulations. The rapid growth of supermarkets in developing countries and trade agreements are also driving food safety concerns.

Globalization of food trade provides greater food choices, but presents the potential for confusion if consistent standards in safety and labeling do not exist. Increased

consumer sophistication and advanced information technology pose both a challenge and an opportunity for firms and government to inform consumers and address their concerns. Maintaining consumer confidence requires not only minimizing the risk of foodborne illness, but responding to consumer concerns through increased education regarding safety of some practices and/or labeling policies.

Animal Health Dimensions

Animal health is closely linked to food safety and consumer confidence, but is also central to the profitability of the livestock and poultry production sectors, and in some cases, even national economies. In addition to increased production costs and lower revenues for farms with a disease, trade restrictions due to the presence of particular diseases have an economic impact on all producers in the industry. One cow testing positive for BSE in the United States resulted in the immediate loss of $3 billion in annual beef exports from 2003 to 2004 (Doud, 2006).

Joint efforts between research universities and public agencies have controlled and eradicated many animal diseases through advances in veterinary medicine, basic research, educational programs, and animal housing. However, without vigilance and effective surveillance systems, even eradicated diseases can return. Vigilance is also necessary to guard against potential terrorist attacks to the food system.

Several developments will play an important role in meeting the challenge of protecting animal health. Animal identification and tracking systems would potentially allow restricted animal movement within or between countries while controlling disease, thus minimizing trade distortions. Farm-level biosecurity measures to reduce disease risk and developments in vaccine research are also providing new tools to lessen the threat and impact of animal diseases to farmers.

Globalization has increased both export opportunities for North American livestock and poultry and the risk of introducing foreign animal diseases that could be economically devastating to these industries. Even if the disease is not deadly and is quickly contained, its presence can have a prolonged economic impact by disrupting exports and trade within North America. To protect animal industries and consumers from importing disease or food safety problems, sanitary and phytosanitary standards have become part of most trade agreements. Phytosanitary standards can be trade distorting and protectionist, accentuating the need for harmonizing standards and their enforcement within the North American Free Trade Agreement (NAFTA).

Providing traceability of animals through production, processing and marketing is an example of interactions between efforts to protect both food safety and animal health. Advances in information technology and improved infrastructure to trace animal disease threats will provide a vehicle to share more product information through the supply chain. Individual firms may utilize the information infrastructure as part of an enhanced process control system. Advanced supply chain management systems also allow for traceability of food products, which facilitates faster, more targeted recalls when needed.

Policy Measures and Implications

Animal health and food safety are important components of national security in each of the North American countries. They are public goods requiring public intervention or collaborative industry efforts rather than individual producer actions (Unnevehr, 2004). The challenge is to develop and implement policies that most effectively protect a safe and secure food supply and a competitive livestock and poultry sector in North America, given increasing concentration and intensification of animal agriculture. Some components of a comprehensive strategy for government, business and research efforts to protect food safety and animal health are identified here. Many of these will require additional resources. There are various vehicles for financing these measures that will help producers and consumers; check-off programs and reallocation of existing program funds are one possibility. Economic pressure in the industry could make it more difficult to obtain such funding, but increased concentration in the industry might make it easier to implement new measures because a smaller number of industry decision makers control more of the supply. Larger firms may be better able to cover the fixed costs associated with protecting food safety and animal health. Further, they have greater incentives to provide food safety, given that a bad publicity event that erodes a firm's reputation or brand could have a significant monetary effect. However, larger firms may be better able to weather temporary drops in revenue or increased costs, somewhat reducing this incentive.

Establish a NAFTA-wide, high-level, authoritative, and accountable coordinating mechanism for food safety

and animal health. Animal health threats go beyond impacts on single private entities to affect the entire animal production value chain and even the economy as a whole, under the right circumstances. National structures coordinated across NAFTA countries and appropriate to organizational and financial constraints faced by each could serve as a focal point for engaging and enhancing partnerships among local, state, and federal agencies and the private sector (National Research Council, 2005). In the United States, several federal and state agencies and various animal and human health organization programs are responsible for food safety and animal health policy, but there are implementation gaps, ineffective communications, and failures in information sharing. The 2005 report by the National Academy of Sciences National Research Council says the United States needs a new high-level mechanism to coordinate research and information exchange and dissemination efforts on new and emerging animal-borne diseases, such as BSE, avian influenza, and West Nile virus.

Strengthen publicly-funded basic research efforts. In the United States, state and federal government agencies could re-emphasize the practice of supplying formula funding on an intermediate or long-term basis to support ongoing basic research efforts. The recent migration toward predominately competitive funding tends to emphasize hot-button issues of an applied nature, rather than supporting long-term, system-wide innovations that would address the animal health and food safety issues outlined in this report. However, this base funding should not be supplied at the expense of Extension and public education programs necessary to effectively disseminate appropriate information.

As the risks to animal health evolve, so must mechanisms to address them. To develop and implement effective and efficient tools, work is needed to assess and predict this evolution of risks, evaluate the current system's response capabilities, identify areas where improvements may be warranted, and communicate them effectively. Attention should be given to risk research and assessment, as well as communication capacity among all stakeholders.

Develop a comprehensive NAFTA-wide diagnostic, monitoring and surveillance network. Such a cooperative and functional network would multiply the efficacy of networks in the United States and Canada and establish a comparable functioning network in Mexico. The network could share access to stockpiles of vaccinations and treatment agents for many of the most probable and virulent diseases and also serve as a clearing house for methods to limit disease spread by effectively utilizing quarantine and animal disposal protocols. Past cooperative eradication programs have set precedent and serve as models for such a network. Eradication programs established jointly between Mexico and the United States for Foot-and-Mouth Disease and screw worm successfully ended the extensive and adverse impacts of both animal health issues in North America.

Enhance capabilities for rapid and widespread information dissemination to industry and the public. Both government and the industry would benefit from fast and widespread access and dissemination of information when dealing with food safety or animal health hazards. This information is essential to retain consumer confidence in the food system at home and abroad. Establishment of national traceability systems is important. Increased public and private investment could help reduce disease transmission and enhance public and animal health. Public awareness supported by education and training programs is critical to food safety and animal disease prevention. It may be possible to develop training for the animal agriculture industry, including local, regional, or national associations, which focuses on strategic and tactical cooperation in the event of food safety, animal health, or biosecurity emergencies.

Increase government-sponsored, food-animal veterinarian positions. A National Academy of Sciences National Research Council report calls for stronger efforts to recruit more veterinarians and other scientists into veterinary research, noting that a growing shortage of veterinary pathologists, lab animal scientists and other veterinary researchers is making it more difficult to meet mounting challenges. These positions could be comprised of more private practice food-animal veterinarians, more government public health veterinarians, and more government veterinarians in research. Sufficient economic incentives attached to these positions would increase attraction and retention of qualified personnel. Food-animal veterinarians would be directly involved in import inspections, live animal auctions, and monitoring concentrated animal feeding operations.

Encourage and provide ongoing support for developing new scientific tools and technologies to enhance animal disease prevention, detection, and diagnosis in North America. The current animal health framework should evaluate, validate, and implement rapid prevention strategies to protect

the health of the nation's animal populations. A gap in the current border protection system is importation or unnoticed transfer of animals produced under nonstandard commercial conditions (exotic animals, backyard livestock, and poultry). There is a documented lack of inspection protocols and procedures involving health of these animals. Animals produced out of the mainstream put national herds and flocks at risk because they are not integrated into the food security network.

Establish indemnity insurance for animal agriculture. Although there are provisions for indemnity payments to producers for animals with value under $3,000, there are currently no government-backed insurance programs for animal agriculture that parallel those for crop agriculture. Consequently, livestock producers are subject to absorbing catastrophic losses (destroyed animals, market loss or collapse, business interruptions) that may be associated with animal health events, particularly for breeding animals with value over $3,000. Financial risk management of animal diseases is an issue that government and industry must effectively address in partnership to ensure that effective and efficient financial risk management tools are in place to deal with future animal disease outbreaks. A revised and strengthened indemnity program could address this issue, reducing private sector uncertainty, and thus increasing reporting compliances and cooperation. A broader production certification program addressing food safety, animal health, and emergency management could also be developed.

Gain international approval for full equivalency of food safety and animal health standards for trade. The present lack of consistency in international standards and their enforcement creates inequities in trade among potential partners and may well limit trading arrangements. It is necessary to eliminate this artificial trade barrier so that competitiveness may be accurately evaluated and gains from trade may be more fully realized. There are currently prescribed events and standards that signal conditions for which trade interruptions commence, but such signals to recommence trade are not readily apparent. A functioning mechanism establishing "triggers" to allow trade to resume once food safety and animal health concerns were alleviated, could be implemented.

Summary

Protecting the safety of the food supply is essential to all countries. Canada, Mexico, and the United States spend significant resources to assure that food is safe to eat and wholesome. Animal health is closely linked to food safety and consumer confidence and is also central to the profitability of the livestock and poultry production and processing sectors. The options discussed here offer a range of public-sector involvement and discretion on how to efficiently utilize scarce government resources. Many of these options will require increased funding, but the benefits of improved protection likely outweigh the costs. Because producers and processors all benefit from reduced risks, developing funding mechanisms to share the costs will be important. Successful financing approaches must also take into consideration the effect of cost pressures, consolidation, and vertical integration on incentives faced by both producing and processing firms.

For More Information

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