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Department of Animal Sciences and Industry

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Upcoming Events

BIF Convention

July 6-9
Billings, Mont.
www.beefimprovement.org

BSE's economic impact on the U.S. beef industry

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K-State's agricultural economics department recently published a comprehensive report titled "The Economic Impact of BSE on the U.S. Beef Industry: Product Value Losses, Regulatory Costs and Consumer Reactions." This article summarizes some of the key findings. Readers interested in knowing more about the study should download the full report from K-State's AgManager Web site: www.agmanager.info/livestock/marketing/bulletins_2/industry

Market response and impact

Within days of USDA's announcement on Dec. 23, 2003, that a single cow in Washington state tested positive for BSE, 53 countries, including major markets such as Japan, Mexico, South Korea and Canada, banned imports of U.S. cattle and beef products. In 2003, U.S. beef exports were valued at \$3.95 billion and accounted for 9.6 percent of U.S. commercial beef production. The import bans caused U.S. beef exports to plummet, and although some important markets, including Mexico and Canada did partially reopen during 2004, export quantities for the year declined 82 percent below the 2003 level.

The loss of export markets was devastating to the U.S. beef industry. Beef and offal products that normally would have been exported now had to be marketed domestically. The reduction in export demand meant that quantities of beef available in the U.S. market increased, thereby depressing domestic prices below levels they would have attained if exports were possible.

The impact of export losses on the beef industry was examined via a trade model. The model incorporated a range of assumptions about the elasticity of demand for beef (Table 1) and offal (Table 2) in order to estimate the price impact of additional supplies on the domestic market. Because the resulting loss estimates depend on the elasticity estimates, the report includes results of a sensitivity analysis to provide a range of probable loss estimates. Results suggest that total U.S. beef industry losses arising from the loss of beef and offal exports during 2004 ranged from \$3.2 billion to \$4.7 billion.

Costs associated with BSE regulations

New regulations introduced in 2004 led to changes in cattle procurement, employment, employee training requirements, food safety plans, capital investments, and marketing opportunities for the beef industry. Regulatory changes also resulted in revenue losses due to products being banned from the food supply. To assess the impact on the industry, seven firms were interviewed to gather data on costs associated with the new regulations. The seven firms represented more than 60 percent of 2003 beef slaughter and were sufficiently diverse to represent a reasonable cross section of the beef packing industry. Considering all these areas of change, and ignoring one-time expenses, the net economic cost to the beef industry in 2004 from FSIS Interim Final Rules was estimated to be approximately \$200 million.

Domestic market demand

In the week following the December 2003 announcement, cattle prices fell by about

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According to the results of a consumer survey, most consumers did not change consumption habits because of the first U.S. BSE case.

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16 percent. Consumer surveys at that time suggested that U.S. domestic beef demand could fall by as much as 15 percent. However, prices recovered in early 2004 as it became clear that U.S. consumer demand had been impacted only minimally, if at all. In fact, market data on beef disappearance and retail prices suggest that consumer demand for beef actually strengthened in the first half of 2004.

To investigate the potential impact of additional U.S. BSE discoveries, a regionally targeted consumer survey was employed. The results suggest that most consumers (77 percent) did not change consumption habits because of the first U.S. BSE case, but that subsequent discoveries, particularly of multiple cases, could have a greater impact on demand. However, it is not possible to infer from these results whether an additional, isolated case of BSE in the United States would have a substantial impact on domestic beef demand.

Testing

The United States has yet to regain access to the Japanese and South Korean beef export markets, the second and third largest markets

for U.S. beef during 2003. Voluntary testing for BSE has been proposed as a means of regaining access to lost export markets, but USDA has turned down a request from a private firm to conduct such testing. The beef industry is sharply divided on the issue. Proponents of voluntary testing tend to view it in terms of a marketing decision with expected benefits outweighing costs, at least in the short run. Opponents see testing as unnecessary and costly, as setting a dangerous precedent in terms of acquiescing to an unreasonable customer requirement, and as a procedure with no scientific justification in terms of risk reduction to consumers.

We estimated costs and potential benefits for a range of testing/market-access scenarios. Voluntary testing by a single, small firm would provide little or no benefit to producers because the increase in the derived demand for cattle generated from such a small-scale increase in exports would have an insignificant impact on domestic cattle prices. The policy could, however, result in significant profits for a firm engaged in testing, at least in the short run, if testing opened up additional markets for a firm's beef products. If ad-

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Table 1. Impact of Carcass Beef Export Losses on U.S. Beef Industry, 2004.

Rest of the World Own Price Demand Elasticity for U.S. Beef	U.S. Beef Own Price Demand Elasticity	Estimated 2004 Beef Price Without Export Market Losses (\$/lb)	Estimated Beef Price Difference Attributable to Export Market Loss (\$/lb)	Estimated U.S. Beef Industry Loss (\$)
-2.00	-0.57	\$1.54	\$0.15	\$3,597,776,864
-1.00	-0.57	\$1.56	\$0.17	\$4,223,094,830
-2.00	-0.67	\$1.52	\$0.13	\$3,189,698,172
-1.00	-0.67	\$1.54	\$0.15	\$3,678,754,617
-2.00	-0.77	\$1.51	\$0.12	\$2,864,761,878
-1.00	-0.77	\$1.52	\$0.13	\$3,258,718,674

Table 2. Impact of Beef Offal Export Losses on U.S. Beef Industry, 2004.

Rest of the World Own Price Demand Elasticity for U.S. Beef Offal	U.S. Beef Offal Own Price Demand Elasticity	Estimated 2004 Beef Offal Price Without Export Market Losses (\$/lb)	Estimated Beef Offal Price Difference Attributable to Export Market Loss (\$/lb)	Estimated U.S. Beef Industry Loss
-2.00	-0.57	\$0.90	\$0.33	\$343,632,987
-1.00	-0.57	\$1.00	\$0.43	\$448,780,151
-2.00	-0.67	\$0.89	\$0.31	\$331,244,054
-1.00	-0.67	\$0.98	\$0.40	\$422,716,385
-2.00	-0.77	\$0.88	\$0.30	\$319,717,347
-1.00	-0.77	\$0.96	\$0.38	\$399,513,854

Does this calf crop need age and source verification?

The marketplace is changing and more demands are being made on producers to provide beef that meets certain preharvest and/or postharvest specifications. There has been some market incentive to do so although not enough that large numbers of producers have elected to pursue them.

Japan has agreed in principle to reopen its market to cattle less than 21 months of age. Some speculate there will be a strong economic incentive to fill this market. A system of aging carcasses was accepted as a valid method to age beef, but only a small portion of the carcasses that were actually less than 21 months of age would have been accepted based on carcass age alone.

Canadian producers who are also competing for the Japanese market, will enhance their national identification system to include age. Producers may voluntarily submit birth dates to the database. This information is subject to a third-party audit.

In addition to age verification for Japan, McDonald's, the largest purchaser of U.S. beef, has been working to verify sources for its products. The company exceeded its goal of verifying 10 percent of beef sources for 2004 because they were willing to pay for

it. Existing premiums for source-verified beef will likely disappear once this practice becomes the norm. Wal-Mart, the nation's largest beef retailer, is also interested in source verification.

Right now, age and source verification can be achieved using a range of identification systems. Each animal must be individually identified. The lack of a uniform identification system will create some headaches when managing the data, but it may help drive the adoption of electronic ID by more producers before a mandatory ID system is in place.

Many producers have source and age documentation but are not sure how to comply with the audit process. The Iowa Beef Center has been following the development of export verification procedures for Japan. They have developed some forms and examples that producers can follow to have documentation for their herds. Examples of these types of materials can be found at www.iowabeefcenter.org.

The verification system is composed of three parts:

- A signed affidavit that moves with the cattle from seller to buyer. The affidavit should include a description of the cattle, a description of the identification system, the claim made (birth date) and contact information and signature of the seller and date.
- A written description of the production and management of the producer's operation. This document is kept on-site by the seller and should reflect the typical management practices as they relate to the claim (typical breeding and calving seasons).
- Supporting documentation that can prove the claim. This might include a calving book that shows calf ID numbers and birth dates. Records will need to be retained on-site for a minimum of three years.

There are still a lot of unknowns about how border and market issues may play out before this calf crop is harvested. Change is inevitable.

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ditional market access is obtained through BSE testing, more firms would be attracted to testing and domestic cattle prices would increase. At present there is no concrete evidence as to whether or not testing would open (or would have opened) any foreign markets.

Our analysis suggests that if all slaughter animals are tested, but there is no increase in access to either the Japanese or South Korean markets, the result would be a net loss of \$17.50 (the estimated cost of testing) per head, plus the added cost of constructing new testing facilities. Alternatively, if full access to the Japanese and South Korean markets is regained without implementing a broad-based BSE testing program, the potential revenue gain ranges from about \$45 to \$66 per head.

Each animal must be individually identified.

The site features a 10-question quiz that allows livestock producers evaluate the environmental stewardship of their practices.

Kansas livestock environmental stewardship launches Web site

The Kansas Livestock Environmental Stewardship Web site is now available at www.oznet.ksu.edu/kles. The goal of the Web site is to provide users with online access to current technologies and regulations dealing with livestock waste and management. Input for the Web site content is provided by representatives from K-State departments of Animal Science and Industry, Agronomy, Biological and Agricultural Engineering, as well as the Kansas Center for Agricultural Resources and the Environment and watershed specialists.

Information on the Web site was designed for Kansas livestock producers with a focus on environmental stewardship. One unique feature is a 10-question assessment that helps livestock producers evaluate the environmental stewardship of their practices. Each question is based on controllable

practices such as location of feeding sites, drainage or vegetation. Currently assessments are available for small farms, youth/4-H projects, cow-calf, stocker, feedlot, dairy, sheep and goats.

The Web site contains information on regulations, composting, nutrient planning, lab testing services, licensed engineers and various publications. To find resources in a specific county, enter the Kansas county abbreviation for a list of contacts. Links to state and federal agencies and a number of related organizations are also available. To keep on top of deadlines for various environmental programs, click on the "sign-up deadlines" link. This centralized source is designed to help livestock producers, educators and others find the information they need quickly.

BIF Convening in Montana

The 37th Annual Meeting of the highly respected Beef Improvement Federation (BIF) will be co-hosted by the Montana Stockgrowers Association and the Animal Science Department of Montana State University, July 6-9, in Billings. The Holiday Inn-Grand will serve as annual meeting headquarters.

More than 500 breeders, animal scientists and industry leaders are expected to attend. The meeting includes tours of eastern Montana cattle operations plus a tour of the USDA Livestock and Range Research Laboratory at Miles City.

Additional information is available by contacting Janice Rumph at the MSU Animal Science Department. Phone: 406-944-7146 or e-mail: janice@montana.edu