

# CRS Report for Congress

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## BSE (“Mad Cow Disease”): A Brief Overview

Geoffrey S. Becker  
Specialist in Agricultural Policy  
Resources, Science, and Industry Division

### Summary

The appearance of BSE (bovine spongiform encephalopathy or “mad cow disease”) in North America has raised public health concerns and disrupted trade for cattle and beef producers. A major issue for Congress has been how to rebuild foreign confidence in the safety of U.S. beef and regain lost markets like Japan. Among other issues are whether additional measures are needed to further protect the public and cattle herd, and concerns over the relative costs and benefits of such measures for consumers, taxpayers and industry. This report will be updated if significant developments ensue.<sup>1</sup>

### What Is BSE?

BSE (bovine spongiform encephalopathy or “mad cow disease”) is a fatal neurological disease of cattle. It is believed to have spread mainly, if not exclusively, by feeding infected cattle parts back to cattle. More than 187,000 cases have been reported in 26 countries, about 183,000 of them in the United Kingdom (UK) where BSE was first identified in 1986. The annual number of new cases has declined steeply since 1992. Humans who eat contaminated beef are believed susceptible to a rare but fatal brain wasting disease, variant Creutzfeldt-Jakob disease (vCJD). Although about 160 people have been diagnosed with vCJD since 1986, most in the UK, no case of the disease has been attributed to any Canadian or U.S. meat consumption.

### BSE In North America

BSE has been reported in six cattle born in North America. The first was an Alberta, Canada, beef cow reported in May 2003. In the United States, a Canadian-born dairy cow was found in Washington state in December 2003, and a Texas born and raised beef cow was found in November 2004 (but not confirmed until June 2005). The other 3 were in Canada, the most recent reported January 2006 in a nearly six-year-old cow from Alberta. (A seventh case, in late 1993, was in a British-born cow imported earlier into Canada.)

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<sup>1</sup> This report, which replaces CRS Issue Brief IB10127, *Mad Cow Disease: Agricultural Issues for Congress*, summarizes and updates information in other CRS reports, listed on page 6. Sources for facts and citation to reports and studies can be found in these CRS reports.

The U.S. Department of Agriculture (USDA) and the Food and Drug Administration (FDA) conducted epidemiological investigations of both U.S. cases. (Canada conducted similar investigations of its cases.) In both U.S. instances, USDA was unable to track down every other animal of potential interest, but those which were found and tested for the disease were negative. Officials concluded that both U.S. cattle likely consumed BSE-contaminated feed manufactured before 1997 regulations prohibited cattle parts in such feed (see below). Despite a beef recall, some meat from the first U.S. BSE cow — or perhaps from 19 others slaughtered with it — may have been consumed, USDA said, adding, however, that the highest-risk tissues from these animals never entered the food supply. No material from the second U.S. cow entered the food supply, USDA also said.

USDA had asked an expert international review team (IRT) to assess its response to the first (December 2003) U.S. case, and to comment on the adequacy of existing BSE protections. The IRT generally concluded (in February 2003) that the investigation had conformed to internationally accepted scientific standards, but urged additional actions, including an intensive surveillance program to measure the magnitude of the BSE problem in North America. The IRT had concluded that other infected animals probably were imported here, some of their parts rendered into ingredients fed to cattle, and amplified within the cattle herd, indigenously infecting some of them.

While agreeing with some of the conclusions (including the need for enhanced surveillance), USDA also responded that the IRT's recommendations were based on the premise of a higher incidence of BSE in the United States than was indicated by current studies. In numerous public statements and in formal rulemaking documents, USDA officials have continued to rely heavily on the findings in a detailed quantitative analysis (using computer simulation) conducted for them by the Harvard Center for Risk Analysis and Tuskegee Center for Computational Epidemiology. This work concluded that BSE was very unlikely to become established or spread in the United States.

## **U.S. Safeguards**

**Import Restrictions.** USDA's Animal and Plant Health Inspection Service (APHIS) is charged with protecting U.S. agriculture from foreign pests and diseases. In 1989, APHIS began to implement increasingly restrictive import controls on ruminants and associated meat products from countries where BSE has been found. In 2003, the agency refocused its policy to allow imports of lower risk products from BSE countries, as long as they could show they had effective BSE controls (Canada was the first). This approach parallels new BSE guidance supported by the United States and adopted in May 2005 by the World Animal Health Organization (OIE for its French acronym).

**Testing and Surveillance.** APHIS has tested cattle deemed of highest risk for BSE, e.g., those with suspicious neurological symptoms, which are nonambulatory, or that die on farms. This program tested about 20,000 cattle in each of FY2002 and FY2003, out of about 35 million slaughtered annually. Following the first U.S. case, USDA in June 2004 launched a 12-18 month program (but still continuing) to determine the extent (if any) of BSE in as many of these higher-risk cattle as possible. Through December 2005, nearly 571,000 of these cattle had been tested for the disease, and all but one were negative. Also as part of its enhanced surveillance, APHIS tested more than 21,000 clinically normal adult animals in late 2005. No BSE was found in these animals.

**Meat Safety.** On January 12, 2004, USDA's Food Safety and Inspection Service (FSIS), responsible for inspecting all live cattle and products destined for human food, published several meat plant regulatory changes. These included declaring, as "specified risk material" (SRM, which are tissues where the BSE agent can accumulate): brains, spinal cords, and other nerve tissues from cattle 30 months of age and older and the tonsils and distal ileum (part of the small intestine) of all cattle — effectively banning such tissues from the meat supply. FSIS also prohibited the slaughter of "downer" (nonambulatory) cattle; and restricted certain meat plant mechanical procedures that could spread BSE infective material into meat products.

**Feed Restrictions.** BSE is generally thought to have first spread and magnified by feeding rendered by-products of infected cattle to other cattle as a protein supplement. Since August 7, 1997, FDA has banned most mammalian (including cattle) proteins from cattle feed. Under the 1997 rule, FDA registers and monitors renderers, feed mills, pet food manufacturers, and others. In January 2004, FDA promised to tighten this rule by also banning poultry litter, plate waste, and bovine blood from cattle feed.

Instead, on October 6, 2005, FDA published a proposed rule banning some SRM (mainly brains and spinal cords from cattle 30 months of age and older, and from all cattle not passed for human food) from all animal feeds, including pet food. The agency said its rule would remove those cattle parts responsible for 90% of potential BSE infectivity. The public comment period ended on December 20, 2005; a final rule is pending.

**Views on Safeguards.** Both the adequacy and enforcement of these government safeguards have been criticized. For example, the Government Accountability Office (GAO) has reported weaknesses in enforcement of the current FDA feed rule. A number of consumer groups and others have asserted that FDA should have been moving much more quickly to implement stricter animal feed rules than now proposed. Separately, USDA's Inspector General (IG) has questioned both the sampling and reporting aspects of the Department's BSE surveillance program. USDA's efforts to reopen the U.S. border to Canadian beef also have been sharply criticized; see below.

Others, including many cattle and meat industry leaders, generally have been supportive of the USDA and FDA safeguards, which the Administration has argued meet and often exceed OIE guidelines. At the same time, some of these same cattle and meat industry leaders have expressed concern regarding the need for, and costs of, some of the newer safeguards, such as the USDA ban on all "downer" cattle regardless of the reason for their inability to stand or walk, and the FDA proposal to expand animal feed controls.

## Industry and Trade Impacts

**Exports.** Cattle production is the largest single segment of U.S. agriculture, accounting for 20% of the value of U.S. farm sales. Exports of U.S. beef and other cattle products are viewed as critical to long-term market growth. The value of beef and beef variety meat exports was estimated by USDA to exceed \$3 billion in 2003 (or about 10% of the farm value of cattle/calves). Four countries bought approximately 90% of these exports: Japan (37%), South Korea (24%), Mexico (20%), and Canada (10%).

Most countries halted imports of U.S. beef and cattle soon after the December 23, 2003, U.S. BSE announcement. Mexico and Canada are among a number of countries

again accepting some U.S. beef and veal. USDA estimates that U.S. beef and veal exports globally reached 461 million pounds in 2004 and 644 million pounds in 2005, compared with a 2003 level of 2.523 billion pounds. The U.S. share of the world beef/veal export market declined from 18% in 2003 to about 3% in 2005.

**Cattle Prices.** Domestic cattle and beef prices had reached record highs in 2003 due to a tight supply-demand situation. Immediately after the first U.S. BSE case in December 2003, these prices dropped sharply, but then recovered substantially. A decline in U.S. cattle supplies, due in part to widespread drought conditions in cattle country along with strong domestic demand for beef, kept farm prices relatively high during much of 2004 and into 2005. USDA has reported that annual average U.S. prices for fed steers (i.e., slaughter-ready cattle) were \$84.75 in 2004, near the lower end of a USDA forecast of \$84-\$91 per cwt. (100 pounds) that had been made just before the BSE case. The 2005 price estimate (made January 2006) was about \$87, and the 2006 forecast was \$81-87.

In a 2005 study of the impact of the BSE situation, Kansas State University estimated that total U.S. beef industry losses due to the loss of beef and offal exports in 2004 ranged from \$3.2 billion to \$4.7 billion. The National Cattlemen's Beef Association earlier in 2005 placed cattle producers' export-related losses at \$175 per head, or \$4.7 billion total.

**Japan Situation.** In October 2004 the United States and Japan had jointly announced a framework for restarting beef trade. Among other things, Japan (where 22 BSE cases have been found) promised to ease its domestic policy of universal BSE testing, and to admit lower risk U.S. beef if the United States could verify that it had come from cattle under 21 months old and that all SRM from the cattle, regardless of age, had been removed at slaughter. However, the Japanese did not finalize a decision to permit U.S. imports until December 2005, following a final report from their independent Food Safety Commission (FSC) certifying the adequacy of U.S. safeguards and safety of U.S. beef.

In mid-December 2005, the first U.S. beef since the December 2003 ban was shipped to Japan. However, U.S. imports were again halted on January 20, 2006, when the Japanese found vertebral column bones (backbone; a prohibited material there) in several boxes of veal shipped by a New York processor. Despite apologies by Agriculture Secretary Johanns and his announcement of tighter U.S. inspection rules, the Japanese have indicated that they will not consider when to restart U.S. imports until they receive and consider a full USDA report on the matter. Some predict the market could be closed for at least several weeks, if not months. Further, many Japanese consumers (and some officials there) reportedly remain opposed to resuming U.S. imports regardless of whether the government again clears the way for them. Meanwhile, these consumers have been substituting other proteins (i.e., pork) and other beef sources (i.e., Australia and New Zealand) for U.S. beef, which once accounted for 25-30% of Japanese beef consumption.

**Canada Situation.** USDA banned all imports of Canadian cattle, beef, and other ruminants and products in May 2003. Claiming evidence of effective Canadian safeguards, USDA in August 2003 announced (without publishing a formal rule) that it would issue permits to import some lower-risk Canadian products, notably boneless beef.

USDA began expanding the types of permitted beef imports in late 2003 and early 2004. In response to a Montana cattle group's lawsuit, a federal judge temporarily

blocked this effort, largely on the grounds that USDA was expanding product eligibility outside of the prescribed rulemaking process. On January 4, 2005, USDA published a formal final rule to reopen the border to additional Canadian products, including younger cattle, but the cattle group again sued. The judge again blocked implementation, but a federal appeals court overruled this decision in July 2005. Since then, Canadian cattle imports have been rebuilding. The January 2006 announcement of another Canadian BSE case, this time in an Alberta cow born after the 1997 feed ban, has not led to any further change in U.S. policy toward Canadian imports.

In a February 2005 report, USDA's IG concluded that the Department's actions on Canada were sometimes arbitrary and undocumented, policy decisions were poorly communicated to the public and between APHIS and FSIS, and controls over the regulatory process were inadequate. USDA's defenders countered that Canada's safeguards are at least equivalent to those of the United States. Restarting cross-border trade is critical for the United States to convince other countries that U.S. beef is safe, they asserted. North American cattle and beef markets have become much more integrated, supporters noted, adding that lingering import restrictions put U.S. producers and processors at a competitive disadvantage by making it more difficult and expensive for them to obtain enough cattle.

## In Congress

A major issue for Congress has been how best to rebuild foreign confidence in the safety of U.S. beef and regain lost markets like Japan. Among the policy questions raised at hearings and other forums have been whether expanded agency actions will further protect the public and cattle herd; the validity of the evolving science behind such actions; and the costs and benefits of such actions for consumers, taxpayers and industry. Besides the safeguards discussed above, Congress has also examined such BSE-related issues as the need for improved labeling and/or traceability of livestock and livestock products, and funding for the government's BSE activities.

**Japan.** The sluggish pace of Japanese rulemaking had frustrated the beef industry and many lawmakers, who believe opening the Japanese market will convince other Asian nations, including Korea, to follow suit (although some of them have partially lifted their bans, and Korea had indicated in January 2006 that it might do so by late March 2006). S. 1922/H.R. 4179 would have imposed \$3.14 billion in retaliatory tariffs on Japanese imports if Japan did not lift the beef ban by December 15, 2005. Elsewhere, a Senate floor amendment to the FY2006 USDA appropriation (H.R. 2744), which would have blocked a new U.S. rule that now permits some Japanese beef imports unless Japan lifted its own ban, was deleted from the final conference agreement (H.Rept. 109-255, P.L. 109-97).

**Canada.** On March 3, 2005, the Senate approved, 52-46, a resolution of disapproval (S.J.Res. 4) of the Canada import rule (see previous page). A related resolution (H.J.Res. 23) did not reach the House floor for a vote. Other pending bills variously addressing the Canada rule include H.R. 187, S. 294, and H.R. 384/S. 108.

**COOL.** Under the 2002 farm bill, mandatory country of origin labeling (COOL) for fresh beef (among other commodities) in supermarkets was initially slated to take effect on September 30, 2004, but Congress has twice delayed implementation, most recently

(under P.L. 109-97) until September 30, 2008. Pending in the House and Senate Agriculture Committees are various proposals (H.R. 2068, S. 1300, S. 1333,) to replace the mandatory program for meats with a voluntary program, among other bills. On the other hand, several bills have been introduced to reinstate an earlier implementation date for mandatory COOL (S. 2038, S. 1331, H.R. 4365).

**Animal Identification (ID).** Some Members have complained that lack of a nationwide animal ID system has hindered the investigations into the U.S. BSE cases. USDA, state animal health authorities, and industry groups have been working to create such a program for several years, but progress has been slowed by differences over such issues as whether it should be publicly or privately run; if, and how, to protect the privacy of producer records; and who should pay. H.R. 1254 would require USDA to establish a nationwide electronic animal identification system. H.R. 1256 deals with protecting the information provided by producers from unauthorized scrutiny and use. H.R. 3170 would create a “Livestock Identification Board” with voting members from industry to oversee a national program. Additional animal ID bills may be anticipated.

**BSE Funding.** Total USDA spending for BSE in FY2005 was estimated at \$123 million, of which \$69 million was for BSE testing (and most of that for the special surveillance program noted above), \$49 million to launch the animal ID effort, and \$3 million for research. For FY2006, the Administration requested \$66 million for USDA’s BSE-related activities, including \$33 million to continue work on an animal ID program, \$21 million for BSE testing/surveillance, and \$12 million for research. FDA’s BSE request for FY2006 was for nearly \$30 million. The FY2006 USDA appropriation (P.L. 109-97) generally covers these requests.

## For More Information

### CRS Reports.

- CRS Report RL32199, *Bovine Spongiform Encephalopathy (BSE, or ‘Mad Cow Disease’): Current and Proposed Safeguards*
- CRS Report RL32932, *Bovine Spongiform Encephalopathy (BSE, or ‘Mad Cow Disease’) in North America: A Chronology of Selected Events*
- CRS Report RS21709, *Mad Cow Disease and U.S. Beef Trade*
- CRS Report RL32012, *Animal Identification and Meat Traceability*
- CRS Report 97-508, *Country-of-Origin Labeling for Foods*
- CRS Report RL32904, *Agriculture and Related Agencies: FY2006 Appropriations*

### Selected BSE Websites.

- **APHIS:** [<http://www.aphis.usda.gov/lpa/issues/bse/bse.html>]
- **FSIS:** [[http://www.fsis.usda.gov/Fact\\_Sheets/Bovine\\_Spongiform\\_Encephalopathy\\_BSE/index.asp](http://www.fsis.usda.gov/Fact_Sheets/Bovine_Spongiform_Encephalopathy_BSE/index.asp)]
- **FDA:** [<http://www.fda.gov/oc/opacom/hottopics/bse.html>]
- **Canada:** [<http://www.inspection.gc.ca/english/anima/heasan/disemala/bseesb/bsesbindexe.shtml>]
- **OIE:** [[http://www.oie.int/eng/info/en\\_esb.htm](http://www.oie.int/eng/info/en_esb.htm)]