

## **What We Know About Mad Cow Disease And Its Recent Outbreak In The United States**

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This article is significantly longer than we typically run in this newsletter. However, the recent discovery of mad cow disease in Washington deserves special attention given the importance of dairy and beef production in Pennsylvania.

### **What is Mad Cow Disease?**

Mad cow disease, also referred to as bovine spongiform encephalopathy (BSE), is a “transmissible, slowly progressive, fatal disease affecting the central nervous system of adult cattle.” Scientists believe that the disease results from the animal eating a modified form of a normal “prion” protein. Scientists are not sure of why or how these normal proteins cause the disease to occur in some animals. The incubation period is approximately 4 to 6 years.

The disease was first discovered in cattle in the United Kingdom in 1986. By 1993, nearly 1000 new cases of BSE were discovered weekly. It is believed that these cattle were fed meat and bone-meal from sheep that had been contaminated with “scrapies,” a related disease that affects sheep.

Many countries have experienced one or more BSE discoveries. Most of these are European. However, Japan is included in this list. You may recall that a Canadian cow was found to have BSE in May 2003.

### **What Are the Details of The U.S. Situation?**

On December 23, 2003, Secretary of Agriculture Ann Veneman announced that a cow in Washington has tested positive for BSE. (Later, a British lab confirmed that result.) The animal was a dairy cow (a Holstein) located on a farm in Mabton, WA (about 40 miles SE of Yakima) that has about 4000 head. The animal was approximately 6-1/2 years old at the time it was culled in early December. The reason for the cull was a difficult birth to a bull calf.

Immediately following the preliminary finding, the federal government quarantined the farm to help ease the investigation process. A couple days later, it also quarantined a bull calf feeding operation where the cow’s bull calf had been sent. Federal agencies worked to trace the cow back to her birth herd, which may have been in Canada. The goal is to account for every location where that cow had spent time. The initial traceback efforts have focused on a livestock market where the animal may have been purchased and the other is a dairy cow finishing herd. These agencies also traced the cow’s other calves. One died at birth while the other remained in the herd at the home farm.

Vern’s Moses Lake Meats (Moses Lake, WA) processed the cow along with 19 others on December 9. Following standard practices, the brain and spinal cord of the animal were not incorporated into the meat that was processed. These materials went

into rendering. Therefore, the meat is safe. Despite this, the processor implemented a voluntary recall in part to reassure the public. The government has worked with the processor and those outlets that received the meat products for retail sale to be sure that all efforts are being made to notify the consumers about the recall.

### **Can Mad Cow Disease Affect Humans?**

BSE is a form of transmissible spongiform encephalopathies (TSEs). You might remember hearing about chronic wasting disease in deer in the north-central U.S. That is a form of TSE. There is a form of TSE that affects humans. It is called variant Creutzfeldt-Jakob Disease (vCJD). Most of the cases of vCJD have been located in the UK, where it is believed some may have eaten contaminated beef. The FDA reports that only 139 cases of vCJD had been discovered around the world as of May 2003. Therefore, it is extremely rare. The one case that was found in the U.S. occurred in a young lady who had previously lived in Europe.

Although there are cases in which humans might have contracted vCJD from eating contaminated beef, keep in mind that BSE has never been found in steaks or roasts. Therefore some portion of the central nervous system must be mixed with the meat to contaminate it. It is standard practice in the U.S. to remove the central nervous system during cow processing. Also, BSE has never been found to transmit through milk from infected cows. Therefore, U.S. beef and milk is still considered to be 100% safe.

### **What Impacts Might This Have on Beef Sales Domestically and Abroad?**

This is the billion dollar question. Domestic consumers need to understand that this is an isolated case. Even the meat from this animal and those processed with it are 100% safe because of the way the meat was processed. However, this will inevitably have a negative impact. Some have suggested that farm prices could drop by up to 20%. This would result in prices around \$80 a hundredweight, which is about the average price. Although this means an end to historically high prices, the outcome may not be as bad as it could have been if prices before the news broke had been lower. Lower prices will be good news for domestic consumers who continue to eat beef. If company stock prices are an indication of consumer sentiment, then things are looking good domestically.

#### **Closing Stock Prices for Representative Group of Restaurants**

	December 23	December 24	December 29
McDonald's	\$25.28	\$23.96 (-5.2%) <sup>a</sup>	\$24.60 (+2.7%) <sup>b</sup>
Outback Steakhouse	\$44.63	\$42.40 (-5.0%) <sup>a</sup>	\$44.50 (+5.0%) <sup>b</sup>
Lone Star Steakhouse	\$23.23	\$22.73 (-2.2%) <sup>a</sup>	\$22.82 (+0.4%) <sup>b</sup>
Wendy's	\$39.66	\$37.79 (-4.7%) <sup>a</sup>	\$38.55 (+2.0%) <sup>b</sup>

<sup>a</sup> Represents the percentage change in share price immediately following the announcement.

<sup>b</sup> Represents the percentage change in share price between Dec. 24 and Dec. 29.

Beef exports will undoubtedly be the hardest hit. Prior to the discovery, exports accounted for about 10% of total beef sales. As of December 26, approximately 18 countries had placed temporary bans on imports of U.S. beef products. These include our major export market countries of Japan, Mexico, South Korea, and Hong Kong. If the Canadian experience is any lesson, then it will take several months to convince our

trading partners that the U.S. beef supply is completely safe. However, both the U.S. and those who import our beef have learned much as a result of earlier experiences. Therefore, most hope that the transition period is much shorter. The speedy response of the U.S. government should also help to expedite the process.

### **Summary**

Most hope that this BSE incident is a short and relatively painless experience. Scientifically, there is very little, if any, reason for consumers to modify their food eating habits. The federal government is doing all it can to quickly trace the animals past locations and its offspring to be sure that this is indeed an isolated incident.

### **Resources**

- The FDA has a great website on BSE:  
<http://www.fda.gov/oc/opacom/hottopics/bse.html>
- The USDA's website provides the most recent information on this situation and a brief timeline of events: <http://www.usda.gov>
- Check the Farm Management Website for Updates:  
<http://farmmanagement.aers.psu.edu>.