



Source: Canadian Food Inspection Agency website

<http://www.inspection.gc.ca/english/anima/heasan/disemala/bseesb/bseesbe.shtml>

## Bovine Spongiform Encephalopathy (BSE)

### What is BSE?

BSE or "Mad Cow Disease" is a progressive, fatal disease of the nervous system of cattle. It is what is known as a transmissible spongiform encephalopathy (TSE). Other TSEs include scrapie in sheep, chronic wasting disease in deer and elk, and [Creutzfeldt-Jakob disease](#) in humans. Although the exact cause of BSE is unknown, it is associated with the presence of an abnormal protein called a prion. There is no treatment or vaccine currently available for the disease.

### BSE in Canada

In 1993 BSE was found in a beef cow that had been imported from Britain in 1987. The animal was destroyed and additional measures were taken immediately by the federal government to deal with any risk that Canadian cattle might have been affected.

Through Canada's BSE surveillance program there have been 3 cases of BSE found in Canada since 2003. The first case of BSE was reported May 20, 2003. The animal was condemned at slaughter and no meat from the carcass entered the human food system. The CFIA responded with a comprehensive investigation that tested some 2,000 animals. All test results were negative for BSE.

The second and third cases were confirmed on January 2 and 11, 2005, respectively. Neither of these animals entered the human food or animal feed systems. Investigations into these 2 cases are complete and all of the animals depopulated through this investigation tested negative for BSE.

BSE has been a reportable disease in Canada since 1990.

### Symptoms/Signs of BSE

BSE is an unusual disease in that the time between an animal's exposure to the disease and the onset of clinical signs normally ranges from four to five years. Animals with BSE may show a number of different symptoms including nervous or aggressive behavior, abnormal posture, lack of co-ordination or difficulty in rising from a lying position, decreased milk production, and weight loss despite an increased appetite. These symptoms may last for a period of two to six months before the animal dies.



## Transmission of BSE

Scientists believe that the spread of this disease in cattle in Great Britain was caused by feeding protein products made from infected cattle or sheep. This occurred in the late 1970s and early 1980s. It was then magnified by the practice of feeding rendered material from slaughtered cattle to other cattle. The protein that is linked to BSE is resistant to normal inactivation procedures such as heat, which means that it may not be completely destroyed in the rendering process and could remain active in rendered material. In 1988, Great Britain banned the use of this rendered material in animal feeds, thus removing potentially contaminated material from the food chain. As a result, since the winter of 1992-93, the number of BSE cases reported in Great Britain has been progressively dropping. In addition, other possible methods of transmission are still being scientifically investigated.

## Diagnosis of BSE

There is no test to diagnose BSE in live animals, although a tentative diagnosis may be made based on clinical signs. Diagnosis can only be confirmed by microscopic examination of the animal's brain after its death.

## How Does Canada protect food safety and animal health from BSE?

Canada, as well as many other countries, has taken precautions to prevent the introduction and spread of BSE. These measures include the following:

- The creation of a surveillance program in 1992 in which the brains of high-risk cattle are tested for the disease.
- Since 1997, Canada has banned the feeding of rendered protein products from ruminant animals (cattle, sheep, goats, bison, elk or deer) to other ruminants.
- Making BSE a reportable disease in 1990, such that any suspect case of BSE must be reported to a federal veterinarian.
- The creation of a Canadian Cattle Identification Program in 2001 for cattle and bison, making it possible to trace individual animal movements from the herd of origin to slaughter.
- Controlling the importation of products that are assessed to have a high risk of introducing BSE into Canada. Canada only allows the importation of live ruminants and their meat and meat products from countries that Canada considers to be free of BSE. Canada also has additional import controls for animal products and by-products from countries that have confirmed BSE in native animals. Their animal products are assessed on a case-by-case basis and may be permitted entry if they are judged not to present a risk of introducing BSE.



- Canada has not imported ruminant-derived meat and bone meal for the purpose of livestock feeding from Europe for more than a decade. In December 2000, the CFIA suspended the importation of rendered animal material of any species from any country that Canada did not recognize as free of BSE.
- Canada requires the removal of certain cattle tissues, known as specified risk material (SRM), from all animals slaughtered for human consumption. SRM are tissues that, in BSE-infected cattle, contain the agent that may transmit the disease. In diseased animals, the infective agent is concentrated in certain tissues such as the brain and spinal cord.

Canada is continually assessing international scientific information as it becomes available and modifying policies as required, based on new information.