

## **BSE: NEED TO KNOW INFORMATION FOR AGRICULTURAL PRODUCERS**

### **What is BSE?**

BSE or Bovine Spongiform Encephalitis is a progressive, fatal disease of cattle, first diagnosed in Great Britain in 1986. The common name “mad cow disease” derives from the nervous, incoordinated or aggressive behaviour that some afflicted animals display. There is no known cure for the disease. BSE has been a reportable disease in Canada since 1990. A suspect case must be reported to a federal veterinarian.



### **Animals affected**

BSE affects cattle. The disease can be transmitted to other animals including sheep, cats and monkeys. It is one member of a family of diseases called transmissible spongiform encephalopathies (TSEs). Other diseases in this family include scrapie in sheep and goats, chronic wasting disease in deer and elk and Creutzfeld-Jacob disease (CJD) in humans.

### **Incidence and distribution**

Ninety-eight percent of all reported BSE cases have occurred in Great Britain. As of January 2004, BSE had been documented in domestically-born cattle in the majority of European countries, Japan and Canada. Three cases have been reported in or linked to Canada. The first case identified in 1993 involved a beef cow that had been imported from the United Kingdom. The second case was identified in Alberta in May 2003. The third case, identified in Washington State in December 2003, involved a cow that had been imported to the U. S. from an Alberta dairy herd in 2001.

### **How is BSE spread?**

BSE is associated with the presence of an abnormal protein called a prion. Abnormal prions are found in large quantities in nervous system tissue such as the brain, spinal cord and eye tissue of infected cows. It is believed that cattle get the disease by eating feed contaminated with rendered material from infected cows. The disease may also be spread from a cow to its unborn calf but the risk of transmission is very low. Since 1997, Canada has not allowed ruminant derived protein (other than blood and milk) to be fed to other ruminants.

## Course of the disease

The time between exposure to the infectious agent and the development of clinical signs is very long, ranging from two to twelve years with an average development time of six years. An animal with BSE may show a number of different symptoms including nervous or aggressive behaviour, abnormal posture, lack of coordination or difficulty rising from a lying position, weight loss and decreased milk production. The symptoms may last for a period of two to six months before the animal dies.

## When should you be concerned about BSE?

Be suspicious when a cow with no other identifiable disease

- Displays nervous or aggressive behaviour
- Shows abnormal posture or lack of coordination
- Is a “downer” (unable to rise from a lying position)
- Experiences weight loss; and in dairy cattle, decreased milk production.



## What should you do if you suspect an animal may be infected?

There is no test to diagnose BSE in live animals, although a tentative diagnosis may be made based on clinical signs. If you notice an animal showing any of the signs of BSE, contact your veterinarian or notify the local Canadian Food Inspection Agency district office, listed in the blue government pages of your phone book. A veterinarian will assess the situation and recommend further action.

## What is the relationship between BSE and Creutzfeld-Jacob Disease in humans?

Creutzfeld-Jacob Disease (CJD) is a fatal, incurable disease of the brain and nervous system that occurs in humans. Several types of the disease exist; only one of which, Variant Creutzfeld-Jacob Disease (vCJD), may be acquired by eating contaminated material from BSE-infected cattle. Cases are rare but, because there is no cure for or immunization against the disease, major efforts are being devoted worldwide to eliminating the incidence and spread of BSE in cattle.

The disease, vCJD, was first documented in Britain in 1996. As of January 2004, the number of definite and probable cases worldwide was 155 people: 145 in the United Kingdom, six in France, one in Ireland, one in Italy, one in the United States and one in Canada. Scientists have concluded the patients in the United States and Canada contracted the disease in the United Kingdom. Variant CJD is not contagious through personal contact.

The most hazardous tissues from infected cattle are the brain and spinal cord. Processed meat products are considered potentially hazardous since the meat they contain may have been harvested using techniques that led to contamination with tissues such as spinal cord, containing large amounts of the abnormal prion. Skeletal-muscle meat, such as steak and roasts, and milk have not been demonstrated to transmit the disease. Canada has policies in place to ensure that the most dangerous materials (known as Specified Risk Materials) do not enter the human food chain directly or through slaughter or processing procedures.

## Preventing BSE and Variant CJD

Preventing BSE and Variant CJD are of critical importance. Canada has an extremely large cattle industry that is very dependent on export markets. The presence of BSE has severely impacted the ability of the Canadian cattle and other ruminant industries to trade on international markets, creating financial hardship across the country. The presence of BSE in Canada necessitates food safety measures such as the requirement to remove specified high risk tissues from mature cattle in order to protect consumers of Canadian beef products from the potential risk of developing vCJD.



## What is the federal government doing?

Canada has implemented the following measures to prevent the introduction and spread of BSE and to promote the safety of the Canadian cattle industry to countries that import Canadian beef:

- BSE has been a reportable disease in Canada since 1990. A suspect case must be reported to a federal veterinarian.
- Canada has not imported ruminant-derived meat and bone meal for the purpose of livestock feeding from Europe for more than a decade.
- In 1992, Canada created a BSE surveillance program in which the brains of cattle are tested for the disease. Recent surveillance has increased in an effort to assure Canada's trading partners that BSE is not common or widespread. After testing 5,500 slaughter cattle in 2003, The Canadian Food Inspection Agency (CFIA) will test 8,000 in 2004 and plans to eventually test 30,000 animals per year.
- In 1997, Canada banned the feeding of rendered protein products (meat or bone meal) from ruminant animals (cattle, sheep, goats, bison, elk or deer) to other ruminants. CFIA inspects feed mills and rendering plants on a regular basis. This measure effectively prevents the transmission of BSE.



- Canada has created the Canadian Cattle Identification Program (CCIA) for cattle and bison, making it possible to trace animal movement from the herd of origin to slaughter. To facilitate tracking, CCIA will switch to radio frequency identification tags from the current bar code dangle tags, starting in 2005.
- Canada requires the removal of certain cattle tissues known as Specified Risk Materials at slaughter to ensure that they do not enter the human food chain. They include the brain, spinal cord and other tissues with a high concentration of the infective agent in

BSE-infected animals.

- Canada has prohibited the use of air-assisted stunning in the slaughter process. Air-assisted stunning greatly increases the incidence of brain tissue entering the rest of the carcass.
- Canada no longer permits the harvesting of meat from the vertebral column by mechanical or automated processes. This helps prevent the accidental contamination of meat products with nervous tissue.
- Canada allows the importation of live ruminants and their meat and meat products only from countries considered to be free of BSE.

## What can beef and dairy producers do?

Since the amount of prohibited material required to cause a case of BSE is absolutely minuscule:

- DO NOT feed non-ruminant feed (for example, swine feed, poultry feed) to cattle. Check your feedbags carefully for the label, “Do not feed to cattle, sheep, deer or other ruminants.” Such feed contains materials prohibited for ruminants.
- If you mix feed on your farm, DO NOT mix feeds for non-ruminants (such as horses, pigs, poultry, dogs etc.) with feed for ruminants.
- DO NOT use the same handling and transportation devices, storage areas or even implements when handling both types of feed.



- If you have both ruminants and non-ruminants on your farm or if you mix your own feeds, keep all invoices for feeds.
- If you notice a cow showing any of the signs of BSE, contact your veterinarian or notify the local Canadian Food Inspection Agency district office, listed in the blue government pages of your phone book. Such an animal MUST NOT be slaughtered “on farm” for human consumption.

For further information about BSE, consult: the Canadian Food Inspection Agency’s “BSE in North America” web pages: [www.inspection.gc.ca/english/anima/heasan/disemala/bseesb/bseesbindexe.shtml](http://www.inspection.gc.ca/english/anima/heasan/disemala/bseesb/bseesbindexe.shtml).

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