



Bovine Spongiform Encephalopathy North America

Bovine spongiform encephalopathy (BSE) is a progressive neurological disorder of cattle that results from infection by an unusual transmissible agent called a prion, which damages the central nervous system in cattle. There is strong evidence that a new human form of spongiform encephalopathy, variant Creutzfeldt-Jakob disease (vCJD), is caused by consuming food contaminated with BSE. As of July 2017, BSE surveillance has identified 25 cases in North America: 5 in the United States (U.S.) and 20 in Canada. Of the 5 cases identified in the U.S., one cow was born in Canada and of the 20 identified in Canada, one was imported from the United Kingdom (UK). Due to the effective surveillance and mitigation measures in the U.S., the World Organization for Animal Health (OIE) categorized the U.S. as negligible BSE risk in 2013.

Strains of Bovine Spongiform Encephalopathy

Evidence suggests there are different strains of BSE; the classical (typical) strain responsible for the outbreak in the UK and two atypical strains.

- **Classical Bovine Spongiform Encephalopathy** - Responsible for most BSE cases in Canada and the U.K. outbreak. This strain has been spread through BSE-contaminated feed and is causally linked to vCJD in people. Typical BSE has not been identified in U.S. born cattle.
- **Atypical Bovine Spongiform Encephalopathy** - These strains appear as sporadic disease, usually in older cattle, and may occur spontaneously. Cases of vCJD have not been linked to atypical BSE strains.



Feed Bans

In 1997, the Food and Drug Administration (FDA) published a regulation that prohibits the use of most mammalian protein in the manufacture of animal feeds given to ruminant animals, such as cows, sheep, and goats. The rule does not prohibit the use of mammalian protein as an ingredient in feed for non-ruminants, but requires systems to ensure that such use does not cause contamination of ruminant feed. The FDA strengthened the 1997 rule in 2008 by prohibiting the use of the highest risk cattle tissues in all animal feed.

What Should Producers Do?

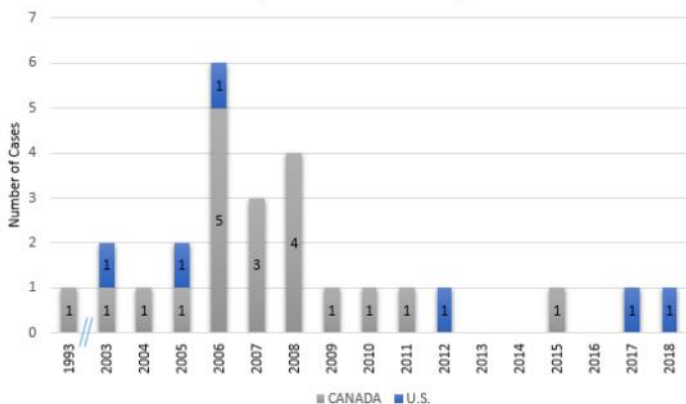
- **Comply with the feed bans** - Do not feed products containing prohibited materials to ruminants (e.g., salvage or distressed pet foods),
- **Keep copies of all feed records** - This includes invoices and labels. Maintain and have available for inspection for at least two years,
- **Establish an individual animal identification plan for your herd,**
- **Report cattle with neurological signs to your veterinarian, and**
- **Humanely euthanize non-ambulatory cattle and dispose of carcasses appropriately.**

BSE Cases in North America by Year and Location				
Year	Province/State	Type	Age (Years)	Strain
Canada				
1993	Alberta ¹	Beef cow	6	Classical
2003	Alberta	Angus cow	6-8	Classical
2004	Alberta	Holstein cow	8	Classical
2005	Alberta	Charolais cow	6	Classical
2006	Alberta	Holstein-Hereford cow	6	Classical
2006	British Columbia	Holstein cow	6	Classical
2006	Manitoba	Beef cow	15	
2006	Alberta	Dairy cow	4	Classical
2006	Alberta	Beef cow	8-10	
2007	Alberta	Bull	6	Classical
2007	British Columbia	Dairy cow	5	Classical
2007	Alberta	Beef cow	13	Atypical
2008	Alberta	Dairy cow	6	Classical
2008	British Columbia	Holstein cow	5	Classical
2008	Alberta	Beef cow	6	Classical
2008	British Columbia	Dairy cow	7	Classical
2009	Alberta	Dairy cow	7	Classical
2010	Alberta	Angus cow	6	Classical
2011	Alberta	Dairy cow	6	Classical
2015	Alberta	Beef cow	6	Classical
U.S.				
2003	Washington ²	Dairy cow	6	Classical
2005	Texas	Beef cow	12	Atypical
2006	Alabama	Beef cow	10	Atypical
2012	California	Dairy cow	10	Atypical
2017	Alabama	Beef cow	11	Atypical
2018	Florida	Beef cow	Mature	Atypical

¹ Animal was imported from the United Kingdom

² Animal was born in Alberta, Canada

BSE Cases as of August 2018 (n=26) in North America by Year and Country Detected



For more information on BSE or the Animal Health Branch, please visit: www.cdffa.ca.gov/ah.



Animal Health and Food Safety Services Animal Health Branch

Headquarters - (916) 900-5002
 Redding District - (530) 225-2140
 Modesto District - (209) 491-9350
 Tulare District - (559) 685-3500
 Ontario District - (909) 947-4462

USDA-APHIS-VS - (916) 854-3950 or (877) 741-3690