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David R. Smith

University of Nebraska at Lincoln, dsmith8@unl.edu

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Bovine Spongiform Encephalopathy in the United States

by David R. Smith, UNL Extension Veterinarian

The USDA announced on December 23, 2003 the first diagnosis in the United States of bovine spongiform encephalopathy (BSE or mad cow disease) in a dairy cow.

BSE is not contagious. It is unlikely that an outbreak of BSE will occur in North American cattle because the United States and Canada took action in 1997 to prevent transmission via contaminated feed. The risk to human health from BSE is minuscule. However, the diagnosis may seriously affect beef exports from the U.S.

What is BSE?

Bovine spongiform encephalopathy is a disease of adult cattle affecting the brain and other nerve tissue. It also is sometimes referred to as mad cow disease. Affected cattle develop progressive behavior changes, abnormal posture, incoordination, reduced milk production and weight loss. The disease typically occurs in cattle 5 years of age or older. It is rare for cattle younger than 3 years old to be affected.

The disease was first diagnosed in Great Britain in 1986. It soon became apparent that an outbreak was occurring in British cattle. The epidemic peaked in 1993 at 1,000 cases per week and has since waned. Currently about 25 cases per week are identified in the United Kingdom. BSE has now been diagnosed in cattle native to many European nations, Japan, Israel, and Canada. The cow diagnosed with BSE in the United States was imported from Canada as an adult.

What Causes BSE?

BSE is one of a family of similar diseases known as transmissible spongiform encephalopathies (TSE). Different TSE diseases are known to occur in several species such as sheep, cattle, deer and elk, mink, and man. The cause of TSE diseases is not known for sure, but a leading theory is that the disease is transmitted by ingestion of an infectious prion protein.

It is not known how BSE originated. However, it is clear that the outbreak of BSE in Great Britain and

Europe was caused because in the early 1980s cattle were exposed to a common source of feed contaminated with the infectious prion. Ingestion of contaminated feed products remains the primary risk factor for transmission of the disease to cattle and the probable mechanism of global spread of the disease. Transmission from animal to animal is unlikely to occur.

Why Has BSE Caused Such Concern?

In 1996 a possible link was proposed between BSE and a fatal disease of humans recently observed in Britain. The disease is a new TSE in humans called variant Creutzfeldt-Jakob Disease (vCJD). The link between BSE and vCJD is likely. To date there have been 143 definite or probable cases of vCJD diagnosed in people from the United Kingdom. The Centers for Disease Control and Prevention believes the current risk to people in the U.S. from BSE in cattle is extremely low. Even in the United Kingdom, the current risk of acquiring vCJD from eating beef and beef products is perhaps about one case per 10 billion servings.

BSE is reportable as a foreign animal disease. If you suspect that an animal may have BSE, contact the USDA/APHIS/VS office (in Nebraska call (402) 434-2300) or the Nebraska Department of Agriculture, Bureau of Animal Industry (402) 471-2351).

File NF455 under: ANIMAL DISEASES

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