

BSE Bovine Spongiform Encephalopathy

Description: Fatal disease of cattle that causes a progressive degeneration of the nervous system.

Cause: This disease is in a group of diseases called transmissible spongiform encephalopathies or TSE's.
The agent is yet to be completely characterized

Proposed Theories are:

- Unconventional virus
- A prion - abnormal form of a normal protein
- Virino - incomplete virus

Characteristics of the agents:

- Highly resistant to heat, radiation, UV light and common disinfectants
- Causes no immune response in the body

Transmission:

- To animals is by their consumption of material containing the agent; feed containing tissue from infected animals; the brain, spinal cord, portions of small intestine.
- To people by their consumption of food containing tissue or tissue products from brain, spinal cord, small intestine from infected animals.
- Possible maternal transmission may occur
- No evidence of transmission from one infected cow to another or to a person.

Similar Diseases:

TSEs include scrapie in sheep and goats, transmissible mink encephalopathy, feline spongiform encephalopathy and chronic wasting disease of deer and elk, and Creutzfeld-Jakob Disease (CJD), Gerstmann-Straussler syndrome, fatal familial insomnia, and variant Creutzfeld-Jakob Disease (vCJD) in humans.

Clinical Signs in Cattle:

- May have a prolonged incubation period months to 2-8 years.
- Always fatal-progressive neurologic disease
- Changes are confined to central nervous system
- Signs: animal may deteriorate over 2 weeks-6 months
 - Changes in temperament
 - Nervousness, aggression
 - Abnormal posture
 - Incoordination
 - Difficulty rising

- Decreased milk production
- Loss of body condition despite continued appetite

“There is no treatment at present for this disease”

Prevention and Control:

- August 4, 1997 FDA passed regulations prohibiting the feeding of most mammalian proteins to ruminants. It is unlawful to do so in the US.
- Ban the importation of ruminants and certain products from countries where BSE has been diagnosed.
- Refusal of slaughter houses to accept any ruminant that is down, unable to rise regardless of cause.
- Random testing of neurologic and other tissues from slaughtered animals. Testing of tissue from animals with neurologic disease. Increase testing of animals post mortem and development of more rapid tests and possibly a test that can be used in the live animal will be future developments.

Risk

- There is no current evidence that the agent is present in meat itself.

For more detailed information on BSE and other TSEs, please visit the following websites:

- <http://www.aphis.usda.gov/lpa/issues/bse/bse.html>
- http://www.aphis.usda.gov/lpa/pubs/fsheet_faq_notice/fs_ahse.html
- <http://www.hhs.gov/news/press/2001pres/20011130b.html>
- www.fda.gov/oc/opacom/hottopics/bse.html
- www.who.int/mediacentre/factsheets/fs113/en/
- <http://www.cdc.gov/ncidod/diseases/cjd/cjd.htm>
- www.bseinfo.org/
- www.usda.gov/BSE
- www.cdc.gov/search “BSE”
- www.hhs.gov/news
- www.animalagriculture.org