



BSE (Mad Cow Disease)

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What is BSE?

BSE stands for bovine spongiform encephalopathy, which is a fatal nervous disease of cattle. It is one of the diverse group of diseases known as the Transmissible Spongiform Encephalopathies (TSEs) that cause degenerative changes in the brain and other nervous tissues. The TSEs of most importance to the Australian livestock industries are bovine spongiform encephalopathy (BSE) in cattle and scrapie in sheep and goats. These diseases do not occur in Australia.

Why is BSE so important?

BSE was first detected in cattle in the United Kingdom (UK) in the mid 1980s. An epidemic developed, peaking in the early 1990s and cases are still occurring today. There have been over 185,000 cases reported and the economic effects have been devastating. The disease attacks the brain and nervous tissues of cattle, altering behaviour and causing them to stagger, hence the name "mad cow disease".

Since 1995, over 160 cases of a new human TSE named variant Creutzfeldt-Jacob Disease (vCJD) have been diagnosed, mainly in the UK. There is strong scientific evidence to suggest that it is linked to eating nervous tissue from BSE-affected cattle.

Victoria and Australia, being BSE-free, have access to many export markets because of this status. If BSE was discovered in Australia, it would immediately close many of these markets, devastating our cattle industries.

Has variant-CJD occurred in Australia?

No cases of vCJD have occurred in Australia. It is highly unlikely that any cases would have escaped detection, as there has been a very active program in Australia to detect cases of CJD, either the variant or normal form. In the years to come, it is possible that a very small number of Australian cases of vCJD might be detected in people who have eaten beef products while living in the UK in the late 1980s and early 1990s.

Australia is one of only 16 countries in the world to-date assessed by the European Union as meeting all criteria for the lowest geographical BSE risk level.

Clinical signs in cattle

Most cases of BSE have been seen in cattle over 4 years of age but animals as young as 2 years may succumb. Clinical signs progress over weeks or months leading to debility, loss of weight, recumbency and death. There is no difference in breed susceptibility. There is no treatment or vaccine to cure or prevent the disease.

Cattle affected by BSE may display behavioural changes such as nervousness or aggression, vigorous kicking when milking, and sensitivity to bright light, sudden noise or touch. Physical changes may include muscle tremors, abnormal posture, poor coordination, difficulty in rising, decreased milk production and loss of body weight despite continued appetite.

How does Australia prove it is free of BSE?

In order to protect Australia's internationally recognised BSE free status, a number of things are done. These include:

- Conducting a disease surveillance program to confirm that Australia continues to meet the international requirements for a BSE free country.
- Preventing entry of BSE by enforcing strict quarantine laws on potential risk materials.
- The Ruminant Feed Ban and related legislation.

Disease surveillance and monitoring

Australia has implemented a national program to monitor the national cattle and sheep populations for evidence of TSEs. This surveillance and monitoring program is a jointly funded venture involving industry and government, specifically aimed at achieving on-going demonstration of Australia's freedom from BSE and scrapie.

Implementation of the program also facilitates the early detection of these diseases should they occur in Australia, thus assisting in the maintenance of Australia's market access.

The surveillance for TSEs involves detailed examination of several hundred cattle and sheep nation-wide on an annual basis. Each state has a program designed to identify animals which have signs suggestive of TSE and, if treatment is not effective, sample those animals to rule out TSEs and determine the cause of the signs.

Preventing entry (quarantine)

In order to maintain its BSE free status, Australia has adopted a complete ban on the importation of live cattle from all countries that have reported cases of BSE.

Live cattle imports were banned from the UK and Ireland in 1988. Bans on live cattle imports have been imposed on other European countries, Japan, Canada and the United States of America as they have reported cases of BSE where the animals affected were born in that country.

All breeding cattle imported from known BSE affected countries have been traced and either slaughtered as part of a voluntary buy-back scheme, or placed under life time quarantine and surveillance. These animals have not and will not be permitted to enter the human or animal food chains.

Quarantine measures to prevent entry into the country of the BSE agent also include a ban on the importation of UK and European beef products, and a ban on the importation of all meat and bone meal products from all countries other than New Zealand.

The Ruminant Feed Ban

The Ruminant Feed Ban places a ban on the feeding to ruminants (animals that chew their cud, such as cattle, sheep, goats and deer) of any material, tissue or blood taken from an animal including meal obtained from rendering tissues or blood from animals (restricted animal material or RAM) but not gelatin, milk products, oil extracted from fish, appropriately rendered tallow or oils previously used for cooking that have been appropriately collected, processed and packaged.

Section 18(1)(a) of the *Agricultural and Veterinary Chemicals (Control of Use) Act 1992* requires any feedstuff to be appropriately labelled or invoiced. Feedstuffs containing RAM are to be labelled as “not to be fed to ruminants.” Feedstuffs not containing RAM are to be labelled as “not containing restricted animal material.”

In March 1996, the World Health Organisation (WHO) and Office International des Epizooties (OIE) advised all countries to ban the feeding of ruminant proteins back to ruminants. This occurred after studies indicated that the source of BSE infection in cattle was meat and bone meal used as a protein supplement in concentrated cattle feed. The meat and bone meal had been prepared from cattle infected with BSE. That same year, a voluntary ban on the feeding of ruminant material to ruminants was adopted in Australia and in 1997 that ban became law in all Australian jurisdictions.

Since BSE was first recognised, more than 185,000 cases have been reported in cattle. The outbreak had devastating effects on the UK and European beef industry and significant flow on effects to the global meat industry.

Ruminant feed bans resulted in an immediate decline in the level of new infections.

The Ruminant Feed Ban and related legislation works to protect the health of Australians, and maintains consumer and market confidence in Australian livestock products.

This Information Note was originally developed by Stephen Nee and was previously published in February 2006.

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