

Mad Cow Madness
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How can one dead cow affect our national economy? How can one case of mad cow disease bring disaster to the county's cattle industry? What is this condition and how does it cause international fear of our beef? What causes this disease which Canada has never experienced before? Farmers and the general public are asking these and many more questions about this dreaded illness in cattle, commonly referred to as Mad Cow Disease. We can find most answers in the British experience of this disease.

In 1985, a British veterinarian reported that he had encountered two cases of a strange and fatal illness in cattle. The animals seemed to go somewhat mad, scratching and the paralytic before dying. He asked if any other veterinarians had seen this alarming condition. They had. About 100,000 cases were found all over Britain during the following decade and dealt with by compulsory slaughter. By 26 January 2001, the total number of cases which had been destroyed was 177,695. Into the new millennium the numbers affected dropped down to about a thousand a year and the peak of this cataclysmic epidemic was seen to have passed, leaving British livestock farming in ruins. In the first half of 2003, only 300 new cases have occurred.

Intense study of the disease showed that the condition was associated with significant pathological changes in the form of the brain and it was more correctly called Bovine Spongiform Encephalopathy, or BSE. Other spongiform encephalopathies are known in other species of animals including sheep, goats, deer (in captivity) and cats but the most horrific is in humans as a rare disease called Creutzfeldt - Jakob Disease, or CJD. This is a progressively, inevitably fatal infection that produces muscular spasms and progressive loss of mental faculties. It has been known since 1957 and occurs throughout the world. It chiefly affects people aged 50-60. The cause is believed to be a specific protein particle called a prion.

The best-known spongiform encephalopathy in animals occurs in sheep and, since it is characterized by scratching or scraping, it is called scrapie. It was first identified in 1930, but as a sheep disorder it has been known for two centuries. No transmission of this disease has ever occurred to humans. However it was thought as the BSE epidemic progressed in Britain, that the scrapie agent was the cause. It was clear that BSE was being spread by eating cattle feed containing ground-up meat and bone meal (MBM) and it was a theory that sheep material had gotten into the MBM and caused BSE in cattle. Since scrapie did not affect humans it was believed for a while that BSE could not affect humans either.

Alas, a new variety (or variant) of CJD began occurring in young people around the age of twenty. This new variant CJD (nvCJD) was found to be caused by the same agent as BSE and contaminated beef was recognized as the source. With the very long incubation period of months or years associated with all forms of spongiform encephalopathies it was feared that many cases of nvCJD would not develop until much later. One journalist even predicted that a generation of young people would be decimated later as a result of inadvertently eating BSE-contaminated beef. No one was sure what the BSE future held and fear of this unknown caused hysteria. Butchers went out of business throughout the country, as did very many farmers. British beef was banned from exportation.

The British government brought in new legislation in an effort to control the BSE epidemic and to prevent any contaminated beef reaching the population of the country. To date, over 80 new laws have been introduced in Britain to deal with the very complicated situation at home and to reduce the danger of

spread of BSE to other countries. A dozen other countries, in fact, have experienced BSE cases. Cases of nvCJD continue to occur, although not in the numbers feared. About 120 confirmed cases (and deaths) have been confirmed to date and one researcher predicts that a total of 200 young people will eventually die of this disease.

Although much is to be feared concerning BSE, the hysteria over it was excessive. America, for example, banned people who had spend over six months in Britain from donating blood on their return to the USA. A realistic policy is needed to deal with this new disease in cattle. This animals affected do not appear to pass it on to other cattle, although cow to calf has been suspected. Those which suffer BSE get it by ingestion and the guilty material is MBM. However, much of the tissue for BSE cases can infect other meat eater such a domestic cats and of course, people. Realistic controls are needed and these have to be rigorously applied and expertly monitored.

In order to determine as many answers as possible to their BSE problem, the British government set up a BSE inquiry. In October 2000, the report of the inquiry was published in 16 volumes. The inquiry came to conclusions on several issues. The inquiry discarded the view that the origin of the BSE agent had arisen from scrapie sheep. Reliance placed on this “scrapie theory,” the inquiry maintained, had encouraged the view that the possibility of BSE transmitting to human beings was remote. The inquiry stated that the cause of BSE “is likely to have been a new prion mutation in cattle, or possibly sheep.” This latter conclusion has been challenged and has not been accepted by many scientists who have been involved in research into spongiform diseases. Some researchers believe that the infectious particle may be a small piece of nucleic acid, as yet to be isolated.

BSE developed into an epidemic as a consequence of the recycling of animal protein, containing the infective agent, in the feed of cattle. As the inquiry report states: “The decline in the BSE epidemic which followed the introductions of the ruminant feed ban...confirmed conclusively that the epidemic had spread by the inclusion of meat and bone meal (MBM) in commercial cattle feed.” What turned the initial cases of BSE from an incident into catastrophe was “the recycling of MBM as an ingredient of cattle feed.” The inclusion of MBM in ruminant rations was prohibited in 1988 and this ban was a crucial factor in limiting the outbreak, the inquiry states.

Since the recycling of animal protein had been used for over 50 years, the risk of a disease such as BSE arising from the practice was “not anticipated or addressed by farmers, renderers, feed compounders, animal nutritionists or government.” Although the correct regulations were introduced in 1988/89 (destruction of BSE cases, removal of MBM from ruminant feeds and the destruction of certain offals) these were not enforced sufficiently rigorously at first. The epidemic continued with cross-contaminated feed.

It has now been pronounced in Britain that their BSE crisis is terminating (with 300 cases in the past six month?). By comparison, Canada’s single case, which was thoroughly dealt with, does not justify a total beef ban by a neighbour on the same turf. Realism must prevail. Some questions remain unanswered such as the causal agent but in the main we can learn from the British lesson and our expert veterinary and scientific services have the matter in hand. We have no epidemic of BSE here and our cattle have a clean bill of health. Rational animal care is the final answer: no MBM in the feed of a naturally herbivorous animal. At best MBM in cattle feed is outdated, at worst it is hazardous. In these times when organic standards are expected in a pure product, this change in feeding practice should be made now.

Acknowledgements

The author spent a year in Britain at the height of the BSE epidemic (1999) and is grateful to colleagues who provided information at that time and subsequently. In particular Mr. H. Hastie and Dr. W. B. Martin, two senior veterinary consultants, are thanked for their great help in compiling this article.