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TRANS ATLANTIC
CONSUMER DIALOGUE

DIALOGUE TRANSATLANTIQUE
DES CONSOMMATEURS

DOC No. FOOD-19-01

DATE ISSUED: APRIL, 2001

BOVINE SPONGIFORM ENCEPHALOPATHY (BSE) AND OTHER TRANSMISSIBLE SPONGIFORM ENCEPHALOPATHIES (TSEs)

DRAFT UPDATED POSITION PAPER (SEE FOOD-11-00)

TACD calls for priority to consumer interest and public health in the BSE crisis

Bovine Spongiform Encephalopathy (BSE) has primarily affected the United Kingdom, however, it has now been identified in a number of other countries. The FAO has estimated that between 1986 and 1996 meat and bone meal (believed to be the source of the infection) from Europe was exported to more than 100 countries. Around 100 countries imported live cattle and some countries also re-exported MBM to third countries. The consequences could be far reaching. BSE, therefore, remains an important issue for the EU and US in public health terms and not merely political ones. The BSE crisis has also raised concerns about other Transmissible Spongiform Encephalopathies (TSE) and their potential health implications. Action is needed on two levels: to deal with the BSE epidemic, which has yet not been completely eradicated; and to develop a new food policy which fully considers consumers' interests and public health. Given all the unknowns, actions should be firmly based on the precautionary principle.

Indeed, since the British Government acknowledged, in March 1996, the existence of ten unusual cases of vCJD (CJD is the nearest human equivalent of BSE, a disease of cattle), the apparent spread of BSE to humans has been front page news in Europe, indeed throughout the world.

The relative youth of those affected, together with certain unusual clinical and pathological features, led to the conclusion that a new strain of the agent has emerged, almost certainly derived from BSE in cattle. An important question now is, how many people will be affected, and what action should be taken to prevent further spread of the disease.

The origins and development of BSE and new variant Creutzfeldt-Jacob Disease

BSE first came to the attention of the scientific community in November 1986 (first identified by the UK's Central Veterinary Laboratory) with the appearance in cattle of a newly-recognized form of neurological disease in the UK.

BSE is a fatal brain disease affecting cattle. The main symptoms are that the cows appear apprehensive and uneasy on their legs, and collapse trembling, and there is vigorous kicking in response to being milked. The disease is commonly referred to as "mad cow disease" because of the animal's behavior.

Over 90 cases of vCJD¹ have now been confirmed in the UK, plus one or possibly two cases in Ireland, three cases now confirmed in France, with a fourth suspected, one possible case in Portugal, one possible case in Norway (awaiting confirmation of the type of CJD) and one possible case in Austria. Two cases have been reported in Poland, but without official verification.ⁱ We do not know what the incubation period will be but based on experience with kuru (another human TSE) it might up to 40 years for some people.

The UK's BSE Inquiry² concluded that BSE probably originated from a novel source during the 1970s such as a cow or other animal that developed disease as a consequence of gene mutation, although the origin of the disease will probably never be known with certainty.

Since October 1997, there has been increasing direct evidence that BSE is responsible for the vCJD in humans. BSE is associated with a transmissible agent the nature of which is not yet fully understood. The agent affects the brain and spinal cord of cattle and lesions are characterized by sponge-like changes. It is a highly stable agent, resisting heating at normal cooking temperatures and to even higher temperatures such as those used for pasteurization, sterilization at usual temperatures and times, as well as to freezing and drying. The disease is fatal for cattle within weeks to months of its onset. BSE is one of several different forms of transmissible brain disease of animals. If we describe the status at the end of 1999 on the evolution of BSE round the world, the figures for cases in cattle are as follows:

Reported cases of BSE

updated to 1 March 2001

Country	1999	2000ⁱ	2001 to date	Total since 1987
UK	2254	1310	66	177,753
Northern Ireland	6	76	1	1865
Guernsey ⁱⁱ	11	11	0	695
Isle of Man ⁱⁱ	3	0	0	438
Jersey	6	3	0	152
Austria	0	0	0	0
Belgium	3	9	4 ^{viii}	23
Canada	0	0	0	1
Denmark	0	1	2	4
Falkland Islands	0	0	0	1
Finland ⁱⁱⁱ	0	0	0	0
France	31	162	36	278
Germany	0	7	34	47
Ireland	96	156	44	625
Italy	0	0	4	6
Kuwait ^{iv}	0	0	0	0
Liechtenstein	0	0	0	2
Luxembourg	0	0	0	1
Netherlands	2	3	5	14
Oman	0	0	0	2
Poland ^v	0	0	0	0

¹ The situation as at March 2001

² The BSE Inquiry. Lord Phillips of Worth Matravers, October 2000

Portugal	170	136	19	522
Spain	0	2	30	32
Sweden ^{vi}	0	0	0	0
Switzerland	50	33	5	370
Ukraine ^{vii}	0	0	0	0

ⁱ figures subject to change as suspect cases are confirmed by laboratories.

ⁱⁱ figures based on clinical evidence only

ⁱⁱⁱ unofficial report of 1 positive case, 27 February 2001.

^{iv} previous case removed from OIE database, presumed negative

^v positive case reported by TASS, denied by Polish authorities

^{vi} report of positive test subsequently proved to be negative

^{vii} positive cases reported by Associated Press, denied by authorities

^{viii} ten cases reported in January proved to be negative

BSE has not been identified in the US, but the US surveillance program, which tests only a few thousand out of 70 million cows a year raised, is too small to guarantee that the US is BSE free. The EU's Scientific Steering Committee in its report on the Geographical Risk of BSE (GBR)³ determined that the US was GBR level II ie. it is unlikely that domestic cattle are (clinically or preclinically) infected with the BSE-agent, but it cannot be excluded.

There is some indirect evidence that in fact a form of bovine TSE may exist at low levels in the US. On several occasions in the last several decades, mink ranches where the animals were fed a diet of condemned cows have been wiped out by TSE outbreaks Scrapie, the sheep form of the disease, exists in many US flocks. A TSE has recently been identified in wild deer in Colorado, and testing of carcasses brought in by hunters shows a 5% infection rate. It is not known to what degree the deer TSE may be transmissible to humans

TACD stresses that priority should be given to consumers' interests and public health in relation to TSEs. The policy objective should be keeping TSEs out of the human and animal food supplies. The long term objective should be eradication of BSE and vCJD.

The precautionary principle

Considering that many uncertainties still remain as to the nature of the disease and how it is transmitted, the TACD calls for the Precautionary Principle to be applied. It is important that this principle applies in the US and EU countries, which to date have had fewer or no cases of BSE in view of the potential health implications. This should include effective surveillance (to ensure that if there were a problem it would be picked up), feed controls, Specified Risk Materials (SRM) controls, controls to remove high risk animals from the food chain and controls to ensure that vCJD can not be re-circulated in the human population. TACD underlines that measures to cope with a risk must be based not only on solid scientific evidence but also on the existence of valid scientific questions that have not been definitively answered. Measures for the protection of human health must be designed to achieve the highest possible level of protection.

Current controls

Until BSE has been eradicated, TACD believes all governments should erect fire walls against the introduction of BSE into the human food supply. These measures should be adopted regardless of the BSE status of the country. Considering the strong evidence for a link between BSE in cattle

³ Final opinion on the Geographical Risk of BSE (GBR) adopted on 6 July 2000

and vCJD in humans, TACD calls for the following measures to protect human health:

TACD considers that priority must be given to addressing the underlying causes of the problem, and therefore calls on the EU and US governments to adopt and enforce strictly the measures required to eradicate BSE and to prevent its appearance and/or reappearance in any herds.

TACD wishes to emphasize the need to ensure a stricter enforcement of the laws and reinforce action for non-compliance.

TACD supports the World Health Organization's (WHO) recommendation, dated April 1996, which states that "No part of any animal which has shown signs of TSE should enter any food chain, human or animal. All countries must ensure the slaughter and safe disposal of TSE-affected animals so that TSE infectivity cannot enter any food chain."

However TACD believes that this is not enough in terms of consumer health protection and calls for the following recommendations to be seriously taken into account by both EU and US governments.

Surveillance and testing: preventing infected cattle entering the food chain

TACD calls for effective surveillance to identify real and potential cases of BSE and remove them from the food chain.

TACD believes that, as long as detection tests at a very early stage of the infection are not available, no country should be classified as BSE free.

TACD supports further development of test methods, and in particular development of a live test for cattle. In the meantime, further guidance is needed on the use and limitations of current test methods. Any incentives to 'hide' BSE cases must be removed, for example, rules that allow for 'private kills'.

Animal feeding-stuffs and ruminant material:

Given that it is recognised that BSE has been spread across Europe – and potentially around the world - via contaminated feed, TACD calls for the following:

(i) A ban on the use of animal proteins in animal feed.

Although a ban on meat and bone meal was introduced across Europe in 1994, BSE has continued to spread. Experience from the UK also suggests that cross-contamination can occur between feeds intended for different species. TACD therefore believes a wider ranging ban is needed, until the situation in relation to BSE provides a reason to review the ban. We are concerned about the temporary nature of the EU ban and call for this to be made permanent. TACD considers that the use of fish protein should be retained in the short term but that urgent research should be undertaken to find suitable alternatives.

(ii) TACD considers that concrete steps should be taken to recall residual stock of feed that might contain existing stocks of feed containing animal protein. Compensation will be essential if compliance is to be ensured. Stocks should be destroyed in such way as they cannot re-enter the food chain.

Preventing high risk animals entering the food chain

In Europe, cattle over 30 months of age now have to be removed from the food chain unless they test negative for BSE.

We are concerned that although tests are now in effect being used across Europe to determine whether cattle are BSE-free or not, they are not sufficiently advanced for this purpose. The current tests are not sufficiently robust for animals in the early stages of BSE. However, the tests are being used to determine whether over 30 month cattle across Europe are 'BSE-free' and therefore fit to enter the food chain. It is not appropriate to use such methods as a public health measure at this stage. However, the current tests may help to gain a clearer indication of the incidence of BSE in countries which have no reported cases or a limited number of cases to date.

The limitations of the EU's approach make it even more critical that Specified Risk Material (SRM) controls are properly implemented and enforced so that even if infected cattle do enter the food chain, the most infective parts of the carcass will be removed. The same principle applies to cattle under 30 months. TACD urges the 30-month rule to be kept under review in light of new information about the age distribution of cattle infected with BSE.

Clear and consistent procedures also need to be developed for when a positive case is identified in a slaughterhouse to prevent any risk of cross-contamination to other animals or carcasses.

Full traceability is essential to ensure that animals over thirty months of age can be identified (see below).

Removal of potentially infective tissues from the food chain

Since October 2000, the following Specified Risk Material (SRM) has to be removed from cattle across the EU:

- All member states except UK and Portugal: skull including the brains and eyes, tonsils, spinal cord and ileum of animals aged over 12 months.
- UK and Portugal: entire head excluding tongue, tonsils, thymus, spleen, entire intestine and spinal cord of animals aged over 6 months; and vertebral column including dorsal route ganglia of animals aged over 30 months in the UK.

From January 2001 this was extended to include intestines from all cattle of any age. The following measures have also subsequently been introduced:

- a ban on mechanically recovered meat from bovines and ruminants of all ages
- a requirement to remove the vertebral column although certain Member States are exempt

TACD calls for effective implementation and enforcement of Specified Risk Material (SRM) controls. These controls are fundamental to ensuring public health protection, yet serious breaches of EU controls continue to occur on a regular basis. TACD also believes it is essential that SRM is removed in slaughterhouses and not by butchers shops in order to ensure effective enforcement.

- A ban on the use of pneumatic stunning in cattle slaughter to prevent the possibility of SRM, namely brain tissue, from contaminating meat.

If other stunning methods result in SRM being introduced into the circulatory system, then they too should be banned.

Where SRM is not banned, TACD calls for the complete removal of spinal cords from spinal columns and neck bones in advanced meat recovery systems. If that cannot be guaranteed, then the use of spinal columns and neck bones should be banned from use in advanced meat recovery systems.

Identification and traceability

TACD stresses the importance of an effective registration/identification system, which should include traceability of products from the plate or the supermarket shelf back to the place of birth of the animal. This system should focus on concrete identification and registration of animals and assurance of the traceability of any movement of individual cattle both nationally and across frontiers.

Enforcement and inspection:

Serious failings in control measures have been identified across Europe.

1. TACD calls for the enforcement of all the rules and controls by the authorities at all stages of production, including at slaughterhouses and on farms.
2. TACD calls for the further development and subsequent use of predictive tests for slaughtered cattle, in order to have a better idea of the incidence of the disease in all countries, including the so called "BSE free" countries, and for better consumer protection.
3. Surveillance should be expanded to sheep, deer, elk and swine so that any incidence can be determined, and TSE positive animals can be excluded from the food supply.
4. Control and implementation should be done by independent agencies or authorities which do not have responsibility for promoting agriculture or industry.

Labelling/Consumer information:

1. TACD places a lot of importance on the consumers' right to know about and to choose the food they buy and eat.
2. TACD insists on the importance of the labeling of beef in the ingredients list of foodstuffs. In that respect, the type of meat must be indicated on all food products that contain meat, and the part of the animal (e.g. liver) that it comes from. The presence of mechanically recovered and/or separated meat should also be indicated on the label where its use is still permitted
3. TACD supports the European Commission's initiative to review the definition of 'meat' for labeling purposes so that it more clearly represents consumer perceptions by being limited to muscle tissue.
4. TACD does not believe that labeling solves the problem; meat is required to be safe. Information should not be a substitute for decisive action on the problem itself and should in no way be used to provide some misleading guarantee to the consumer.
5. TACD calls for clear country-of-origin labeling for all meat products.

Sheep

There is a possibility that BSE may have passed to sheep. Sheep fed infected material have gone on to develop BSE, however it is not known where this has happened in practice. If BSE has passed to sheep, current controls would be inadequate. In the EU, the skull (including brains and eyes), tonsils, and spinal cord of animals aged over 12 months, and the spleen of all animals have to be removed from sheep. However, if BSE had passed to sheep, infectivity would be spread throughout the carcass due to the nature of the lymphatic system. Therefore although existing controls would help reduce the risk, they would not remove all infectivity.

TACD considers that:

- further research and surveillance is needed as a priority to determine whether BSE has passed to sheep
- a contingency plan needs to be developed should BSE be identified in sheep
- consumers need to be given clear information about the uncertainties over whether sheep could have BSE and the inadequacies of current safety measures should this be the case to enable them to make informed purchasing decisions.

Preventing human transmission

As BSE cases increase across Europe, so does the potential for people to be infected by vCJD. It is essential that the US and EU governments keep control measures to prevent human to human spread (for example via blood products or surgical instruments) under review and ensure that the precautionary principle is applied.

Research

TACD calls upon the EU and US institutions to allocate increased funding for independent research into the origin of TSEs, in particular into whether and how they are transmitted to other animals and to humans

Research on BSE and vCJD, as well as on the relation between them, should be intensified and extended to all prion diseases (TSE). Special attention should be paid to the question of how "exposure" might transmit the disease from cattle to humans, including stunning methods causing infective tissue to spread through an animal and contaminate meat. There is a real need for research into the nature of the agent, how it is transmitted, whether it is accumulative, infectivity of various tissues e.g. bone marrow, and the possibility of BSE passing to sheep flock.

Research should be conducted on the epidemiology of the disease, the agents that transmit the disease, the mechanisms involved in the pathological process, as well as on the preventative and therapeutic possibilities for established prion diseases. Moreover, improved methods for CJD diagnosis in humans should be developed and the reporting of new cases should be improved.

Several tests are becoming available, and these should be developed urgently in order to determine whether live animals are contaminated, and to determine the presence of BSE in animals after slaughter.

Funds should also be allocated to enable effective surveillance, the development of a reliable system of epidemiological monitoring of BSE and to the collection of reliable statistical data based

on existing cases.

Food policy and production methods

1. Considering some of the factors that lie at the heart of the BSE crisis, TACD stresses the need to re-consider how agriculture is practiced. A more sustainable system of food production is needed which is geared towards consumers' health and environmental concerns.
2. TACD calls for a major review of food production methods, not only to improve health and safety but also to ensure that production methods correspond more closely to consumer expectations and preferences.
3. The EU and US should institute TSE eradication programs throughout the region, with the goal of eliminating all TSEs, including TSEs in sheep and wild populations. While this will be a difficult task, strategies for achieving these goals should be discussed.

Decision making process

TACD considers that all measures taken to combat the risk of BSE must be implemented in a fully transparent way, and therefore calls for the following:

1. Full transparency over the scientific basis on which EU and US decisions are taken – and any other factors that may influence policy (This should include the formulation of scientific advice by scientific committees as well as use of this advice by policy makers)
2. Full information including all known facts regarding the relationship between BSE and CJD and remaining uncertainties must be made public
3. TACD calls for a multi-disciplinary approach that involves both veterinary and public health expertise, and experts representing civil society, with full transparency. The decision-making process must be inclusive from the outset.

ⁱ Reuters Business Report, 6 December 2000.