

Session 7 Nutrition, residues and health

L 2 TRANSMISSIBLE SPONGIFORM ENCEPHALOPATHIES WITH PARTICULAR FOCUS ON PREVENTING OF BSE IN POLAND

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TSEs in animals

The diseases of animals called as transmissible spongiform encephalopathies comprise:

	host	data of transmission proved
Scrapie Widely occurs in some countries	sheep, goats	1936
Transmissible mink encephalopathy (TME) rare occurrence, morbidity in adults reaches 100 per cent	mink	1965
Chronic wasting disease (CWD) U.S.A. (Colorado, Wyoming, Nebraska), Canada	deer, elk	1983
Bovine spongiform encephalopathy (BSE) Great Britain, Ireland, Switzerland, Portugal, Belgium, Denmark, France Spain, the Netherlands, Liechtenstein, Luxemburg, Germany, Italy, Canada, Falklands, Oman	cattle	1987/88
Feline spongiform encephalopathy (FSE)	cat	?

In the last 15 years Bovine spongiform encephalopathy has caused great epidemiological, economical and political problems as well. Therefore most of the lecture focuses particularly on BSE.

Scrapie in sheep and BSE in cattle show many similarities. Long incubation period is the most characteristic feature of all TSEs. The histopathological picture of the brain tissue in scrapie, BSE as well as in TSEs of other animal species are very similar. These are the spongiform structures in the defined parts of the brain. The treatment of brain extracts with detergents provides the possibility for finding of the Scrapie Associated Fibrils – SAF in electron microscopy. The fibrils contain the modified PrP protein. At present no *intra vitam* laboratory tests are available for diagnosis of BSE. This is partially due to the lack of any known immunological response in the course of the disease. The disease can be diagnosed when the clinical symptoms come up.

Bovine spongiform encephalopathy (BSE) is a novel disease diagnosed for the first time in Great Britain based on the histopathological examination of the brain of sick cow. The first information was published in November of 1987. During the next 4 years the disease has spread in Great Britain causing serious economic losses. The analysis of the clinical records revealed that the first cases of BSE were noticed in Great Britain in April of 1985.

BSE occurs in adult cattle of both sexes the most often at the age of 4-5 years. The second peak of the outbreak of BSE is at the age of 7 years. BSE is a neurological disease with apprehension, aggression, lack of coordination of hind limbs, swayback, drop of milk yield, wasting. The disease lasts for several weeks to several months before the death.

Histopathology reveals the degenerative process in the brain that is characterised by the presence of vacuoles around nuclei of neurones of grey matter. The condition is described as a status spongiosus, gliosis and an accumulation of amyloid plaques. This is the classical picture of the TSEs of man and animals. In natural cases BSE is transmitted via alimentary route but the vertical transmission (from cow to calf) also occurs. The first clinical symptoms are followed by a long incubation period, which lasts several months to several years. BSE can be transmitted to healthy cows after injection of brain homogenate of the sick cow. The incubation period is long and it takes 1-2 years.

The way of transmission and the occurrence of BSE

The epidemiological studies have shown that the BSE agent is transmitted via the meat and bone meals (MBM) of sheep and bovine origin which were added as a protein supplement to the feeding stuffs. Two hypothesis of BSE origin are discussed at present. The first assumes that BSE resulted from the transmission of scrapie agent to cattle its adaptation to a new host and then circulation of the agent within cattle population. The second assumes that BSE was present in cattle population as an undiagnosed very rare condition. In a certain period and because of the higher exposition (feeding of cattle with MBM) the number of BSE cases started to grow. It is assumed that the concentration of the infectious agent was not high but dairy cattle of many British farms were exposed during many years. There is no scientific proof that the agent is transmitted from cow to cow i.e. that the horizontal route of transmission may play a role in the spreading of the disease. If this would not be a case the alimentary route of transmission (through MBM) would be the only way of spreading BSE.

In 1988 British government introduced the ban on using of ruminant protein in feeding of ruminants looking forward to breaking of the transmission chain. However, in natural conditions the average incubation period is 4-5 years. This is probably the cause that the highest number of outbreaks was noticed in Great Britain in 1992 – 37280 cases and in 1993 – 35090 cases.

In July 1988 the Government of Great Britain introduced the ban on feeding of ruminant protein to ruminants to break the epidemiological chain. However, the average incubation period of BSE in natural conditions is 4-5 years. This was probably the reason that the highest number of cases was noticed in the years 1992 – 37280 cases and in 1993 – 35090 cases. 35 per cent of dairy cattle farms have noticed only one BSE case and 75 per cent less than 5 cases. Only 13 per cent of affected farms have registered 10 or more cases. Since 1994 constant drop of BSE cases has been observed. The epidemiological simulation indicates that the epidemic is extinguished 2001-2005.

Since April 1985 till March 12, 2001 182 233 BSE cases in cattle in Great Britain have been confirmed and 1 811 in Northern Ireland. Outside of U.K. till March 12 only 1934 BSE cases have been registered. The number of BSE cases till March 12, 2001 shows the table 1.

Data for Denmark does not include the BSE case, which was diagnosed in cow exported from Denmark to Republic of Ireland. Data for France does not include BSE cases found in cattle exported from France to Portugal and to Republic of Ireland. The data for France include the BSE case found in cow imported to France from Switzerland. The first case of BSE in native cattle was diagnosed in Germany on November 25, 2000. No BSE cases were noticed in Poland up to now. However, the Russian news agency ITAR TASS announced on December 1, 2000 that in Poland BSE was diagnosed. Sharp deny for the Chief Veterinary Officer of Poland has issued this information.

Data for Portugal do not comprise of three cases of BSE, which has been diagnosed in cattle, imported to Azores from Denmark, France, Germany. Spain diagnosed its first case of BSE on November 22, 2000. The second case was noticed on December 7, 2000. The data for Switzerland relates to May 15, 2001. 16 cases out of 33 found in 2000 were diagnosed with Prionics Check. One case was found out in cattle exported from Switzerland to France. The information on the occurrence of BSE in Ukraine has been published however the Ukrainian authority has denied it.

Only 1934 cases of BSE have been noticed in the EU Member Countries on the Continent. This is the most surprising information as they have imported 55 400 young cows and heifers from Great Britain in 1985-1990. Moreover, the Continent Member Countries have imported thousands of tonnes of MBM from Great Britain. The situation can suggest that the incidence of BSE in the Member Countries on the Continent may be undervaluated or not all cases of BSE have been reported.

According the statistics of Ministry of Agriculture, Food and Fisheries which recently has been transformed into Department of Environment, Food and Rural Affairs the disease has affected 34 336 farms of which 21 768 (63.5per cent) is the dairy farms and 9 222 is the fattening farms (26.9 per cent). In total 36.7 per cent of British farms is affected with BSE. 99 per cent of BSE cases have been found in cattle born in Great Britain. France, Ireland, Portugal, Belgium, the Netherlands, Luxembourg and Switzerland have

recorded the BSE cases almost exclusively in cattle born in those countries. It is suspected that BSE in native cattle in countries outside of Great Britain is the results of importation of the feeding stuffs contaminated with BSE agent.

Table 1. Number of BSE cases in various countries

Country	1999	2000	2001 till 15 May	All since 1987
Great Britain	2277	1311	160	180824
Northern Ireland	6	22	1	1812+54*
Belgium	3	9	13	32
Denmark	0	1	2	4
France	31	162	73	315
Germany	0	7	57	70
Republic of Ireland	96	156	51	648
Liechtenstein	0	0	0	2
Luxemburg	0	0	0	1
The Netherlands	2	3	8	16
Portugal	170	163	34	564
Poland	0	0		0
Spain	0	2	43	45
Switzerland	50	33	12	377
Ukraine	0	0	0	0
Canada	0	0	0	1
Falklands	0	0	0	1
Italy	0	0	13	15
Oman	0	0	0	2
Czech Republic #	0	0	1	1
Greece #	0	0	1	1

* Cases awaiting for confirmation

Cases diagnosed 6.06.2001 and 5.07.2001, respectively

The source of infection and the way of transmission of BSE in cattle

As it was mentioned the epidemiological survey in Great Britain in 1987-1988 as well as in 1991 confirm that the MBMs were the source of infection. Cattle were fed with additives containing meat and bone meals. The ban for feeding of animals with animal proteins has caused the decrease of number of BSE cases since 1993 on despite of the fact that not farmers followed the ban. The source of infection and the circulation of BSE agent in cattle population are unknown. The hypothesis of adaptation of scrapie agent to cattle or the presence of BSE in cattle population at a very low level of occurrence is discussed. The modification in the technology of processing of animal abattoir offal and fallen stock, the application of phosphor organic compound in subtoxic concentrations and the possible role of bacteria showing cross reactivity with neurological tissue are discussed. In the real life and particularly in biology the relationship „single cause single effect” are very seldom. It seems very doubtful that the origin of BSE can ever be explained or to put together all the conditions that resulted in BSE.

However the ban on feeding of farm animals with animal proteins and the sharp drop of BSE cases seem to confirm the hypothesis that this is the MBMs that is the key way of transmitting the infectious agent and BSE. The table 2 shows the number of BSE cases in Great Britain in the subsequent years.

Table 2. Number of BSE cases in Great Britain from 1987 to 2001

Year	Number of BSE cases	Year	Number of BSE cases
1987	446	1995	14562
1988	2514	1996	8149
1989	7228	1997	4393
1990	14407	1998	3235
1991	25359	1999	2254
1992	37280	2000	1311
1993	35090	2001(15.05)	160
1994	24436	All together	180824

To limit the BSE epidemic Great Britain introduced the following measures in 1988:

- slaughter and incineration of all animals in which BSE was diagnosed,
- ban on feeding of ruminants with ruminant protein.

The first measure was targeted to the protection of human health in case it would be proved that BSE could cross the species barrier and infect humans.

The relationship BSE - vCJD

The question is why BSE causes so much interest and why the information published by mass media moved so deeply the public opinion ? As it was already mentioned BSE is said to transfer to humans causing human spongiform encephalopathy called as variant Creutzfeldt Jakob Disease – vCJD. vCJD seems to bind together animal and human epidemiology. On March 20, 2001 the British Health Minister presented in British Parliament – House of Commons – the information on new disease - vCJD – which affected people at the age less than 42 years. The sporadic Creutzfeldt Jakob Disease (CJD) affects older humans usually at the age over 60 years. The average age of CJD patients is 65 years. In the course of vCJD the patients experience early psychiatric symptoms, early loss of coordination and later onset of dementia. The disease lasts up to 14 months. In contrast the patients with CJD experience poor concentration, a lethargic nature and unsteadiness followed by agitation, dementia and chronic muscle spasm. Symptoms lasts less than one year with average duration between 4 to 6 months. CJD was not noticeable in Great Britain before 1990. The average number of CJD cases was 30 per year. In 1990 the CJD Research and Surveillance Unit was established. Since that time around 50 cases of CJD per year are registered in Great Britain. The number of CJD cases in Great Britain shows table 3.

Table 3. Number of Creutzfeldt Jakob Disease cases in Great Britain since 1994

Year	Number of sporadic CJD	Year	Number of sporadic CJD
1994	59	1998	63
1995	46	1999	61
1996	60	2000	44
1997	52	2001(do 30.03)	4

This means that the rate of CJD was 1 case per 1 million of inhabitants and it did not differ from the rates observed in other EU Member Countries.

Opposite CJD - vCJD affects young people with average age 26 years. As it was mentioned it starts with psychiatric symptoms like depression followed by loss of coordination and dementia. By the end of June 2001 the total 105 cases of vCJD was recorded: 101 in Great Britain, 3 in France and 1 in Ireland. The most interesting fact is that majority of vCJD cases was notified in Great Britain.

BSE from the very beginning was considered as potentially dangerous for humans as it could be transmitted through food. This is related with the fact that cattle during the incubation period does not show any clinical signs of disease and can be slaughtered for human consumption. This fear has originated from information that BSE can cross the species barrier.

The first regulations protecting humans from entering of bovine infectious material into the food chain were in Great Britain:

- destruction of carcasses of animals showing clinical symptoms,

- enforcement of the requirements for abattoirs in testing of animals before slaughter,
- ban on milk from cows suspected for BSE or with BSE - milk can be use only for feeding of calf born by the cow,
- introduction of a new list of the Specific Bovine Offals (SBOs) forbidden for human consumption. Since April 1995 SBO has to be stained with Brilliant Blue V (E131). The ordinary abattoir offals (non-SBO) as meat not fit to human consumption is stained black with Black PN (E151) before being removed from slaughterhouse.

At the time of introduction of the first regulations on BSE control in 1988 limited information on the nature of the disease was available. Categorisation of the carcass parts of cattle as SBO was based on the information available for scrapie in sheep. The reports from BSE investigation point that the supervision on the SBO was not effective and the regulations were not followed until 1996. In consequence significant amounts of SBO entered the human food chain and animal feeding chain. In response the Spongiform Encephalopathy Advisory Committee (SEAC) on November 23, 1995 expressed deep concern because of not strict removal of spinal cord from carcasses and recommended the ban on use of vertebral column for production of mechanically recovered meat. The ban on use of vertebral column for mechanically recovered meat could have been introduced earlier as it was already accepted in 1990 and it was written in the Report No. 5 of the Agriculture Committee of House of Commons. However the inspections at abattoirs reported the presence of pieces of spinal cord on bovine carcasses. The BSE Bulletin of October 27, 1998 informed that 100 per cent of slaughterhouses followed the regulation on removing of spinal cords and that since March 1996 no cases of presence of spinal cords on bovine carcasses were found. In Northern Ireland no cases of spinal cord on bovine carcasses were found between October 1996 and July 1997. In July 1997 a small piece of spinal cord was found in bovine carcass not fully cut in halves.

On March 20, 1996 SEAC recommended and the British Government accepted the following requirements:

- Carcasses of bovines at the age over 30 months should be deboned only in licensed meat production units or cutting plants under supervision of Meat Hygiene Service (MHS) and offal from that process should be considered as Specified Bovine Offal (SBO). However on April 3, 1996 the general rule was put in force that all bovine animals in the age over 30 months old should be slaughtered under MHS supervision and destroyed
- Ban on used of MBM for feeding of all farm animals
- Minister of Health and Hygiene along with Advisory Committee for Dangerous Pathogens and after consultations with SEAC should look through regulations in respect of what was said above
- SEAC should make necessary suggestions what studies should be undertaken to explain the doubts in ethiology, pathogenesis and diagnostic of BSE.

SEAC underlined the importance of constant monitoring of BSE and introduction of regulations on protection of human health as well as constant supervision on removing of spinal cord from carcasses. SEAC made the statement that "If all these requirements are followed the SEAC considers that the risk of BSE from eating beef is probably highly unlikely. SEAC advised the institutions that monitor the occurrence of CJD to extend the study for better knowledge and understanding of the nature of prion diseases. British Government immediately accepted those recommendations.

In June 1997 SEAC recommended the extension of the checks for SBO on the carcasses of bovine animals imported to Great Britain. Till now the ban on use of heads, spinal cords and other tissues of bovine animals in human food chain as well as in pharmaceutical and in cosmetic and medicinal products was applied for cattle slaughtered in Great Britain. The British Government introduced these regulations also to bovine materials imported to Great Britain and this regulation might be applied by British side only if The European Commission did not accept it.

On July 23, 1997 ministers for agriculture of EU Member Countries agreed that the Commission introduced above described requirements in January 1998. However because the agreement was not reached the introduction into force of this requirements was postponed till April 1998.

On February 25, 1998 the European Commission under the German pressure decided that the countries carrying the status "BSE free" i.e. countries with no BSE cases in native cattle (at that time Austria, Denmark, Finland, Germany, Greece, Italy, Spain, Sweden) would be excluded from following of the BSE regulations. However the discrimination between "native cattle" and "non native cattle" is rather a matter of philosophy because if the Specified Risk Materials enters the marked it is not really important if they come from native or from imported cattle. Moreover, the group of experts have defined the reasons for which from scientific point of view it is impossible to apply the category "BSE free" for a particular country. The group of experts prepared and accepted on July 6, 2000 the methodology for evaluation of the Geographical Risk of Bovine Spongiform Encephalopathy (GBR). GBR is a qualitative indicator of the likelihood of the presence of one or more cattle being infected with BSE, pre clinically as well as clinically at a given point in time in a country or region. In case of clinical outbreaks of BSE the GBR gives an indication of the level of infection.

It is worth to notice that GBR methodology does not apply the status of "BSE free" but every country can be assessed according with this methodology if it provides information required for the assessment. GBR evaluation is limited to bovine animals and feed based transmission of BSE. It does not take into account any other initial sources of BSE than the import of infected cattle or contaminated feed. GBR assumes that BSE first appeared in Great Britain and from still unknown source. As it is seen from methodology its clear that it does not relates to the clinical cases of BSE but to the likelihood of presence of one or more animals infected being during incubation period. Analysis based on the incidence of clinical cases of BSE may be difficult to perform as it is difficult to asses the situation in different countries due to the internal limitations of the surveillance system in a particular country which can differ very much from one country to another. However the advantage of the GBR methodology is that it allows for an easy identification of possible additional measures that in a given situation may improve the ability of a country to cope with BSE.

The methodology and procedure for evaluation of GBR set up the following risk categories:

- | | | | |
|-----|--|----|--------------------------------|
| I | BSE highly unlikely | II | BSE unlikely but not excluded |
| III | BSE likely but not confirmed or confirmed at a lower level | IV | BSE confirmed at higher level. |

Discussing this categorisation it should be underlined that category III of GBR comprises two status which does not fit each other. It is not logic to put into one category countries with "BSE likely but not confirmed" and "BSE confirmed at a lower level". The high "epidemiological potential" BSE in the country does not necessary mean that the country is on its best way to having clinical BSE. It can happen and the Polish example seems to confirm that at least at the moment that despite of the mass importation of MBMs from countries in which later on BSE appeared they were not used for feeding of cattle. However the experts from the Scientific Steering Committee (SSC) of the EU do not recognise that fact. They agrees e.g. that the borderline between GBR category III and IV is evaluated on the arbitrary base as there is no clear scientific justification for this differentiation. The suggestion from OIE has been adopted. It says that the cut off value between the GBR level III and IV is 100 confirmed cases of BSE per million bovines at the age over 24 months in the country or region in the last 12 months. Categorisation presented by the SSC has resulted from Swiss experiences, which shows that active monitoring of BSE reveals more BSE infected animals than passive monitoring. The difference between passive and active monitoring is that passive relates only to the animals with neurological signs whereas active monitoring comprises animals with neurological signs and animals dead on farm, emergency slaughtered animals and estimated number (e.g. 3-10 per cent) of healthy bovines at the age over 30 months slaughtered for human consumption. Based on the epidemiological data from Great Britain and Switzerland the SSC experts claim that passive BSE surveillance does not give a true estimate of existing BSE situation in the country. Passive surveillance based solely on notification of symptomatic BSE suspects is able to detect not more than 50 per cent or one third or even less of all infected animals.

In the first half of 2000 the experts of SSC evaluated GBR in Member States and in selected so called third countries. All together GBR for 23 countries has been estimated. The result of this evaluation the European Commission presented at the end of the final opinion of SSC published on July 6, 2000. None of the Member Countries has obtained category I GBR. Category II GBR has obtained only three countries: Austria, Finland and Sweden where no clinical cases of BSE have been recorded. Belgium, Denmark, France, Germany, Ireland, Italy, Luxembourg, the Netherlands, Spain have got category III of GBR. Category IV of GBR has got Great Britain and Portugal. Many Member Countries have protested against this categorisation e.g. Denmark, France, Germany. Those Countries have claimed that the evaluation is unfair and unjustified in their case. However, despite of the protests SSC and the European Commission have not change the categorisation. As it turned out in November and in December 2000 as well in January 2001 the Scientific Steering Committee and the European Commission have foreseen and anticipated outbreaks of BSE in native cattle in those Countries. It should be mentioned that those Countries have fed cattle with MBMs till December 2000 having in mind the risk connected with such a practice and all the experience with BSE in Great Britain. Category I has got Argentina, Australia, Chile, Norway, New Zealand, and Paraguay. Switzerland has got category III of GBR.

In September 2000 the European Commission asked 46 so called third countries which export food products to the EU for submitting dossier for evaluation of their GBR. The European Commission has got 36 dossiers of which 6 have been evaluated and the decision has been published and 30 is still under evaluation. GBR for Poland the Commission published on March 30, 2001 qualifying Poland as GBR category III. Consequently, Poland which have not recorded clinical cases of BSE was classified at the same BSE level as Ireland (625 BSE cases), Switzerland (373 cases), France (299), Germany (79), Spain (40), Belgium (27), the Netherlands (14) and Italy (14 cases). Out of so called Candidate Countries (CC) category III of GBR has got Czech Republic and Hungary. Lithuania and Slovak Republic have got category III of GBR as well. The SSC has underlined that the EU veterinary inspectors that should happen in the nearest future have not verified the data provided by the Polish Government. The SSC opinion on GBR in Poland says that the BSE external risk was very low in the years 1980-1986, a very high between 1987-1990 and extremely high since 1991 mainly due to massive imports of MBM from BSE affected countries (in a range of 1 700 000 tonnes) mainly from Germany (1 000 000 tonnes in total). High imports of cattle have been also recorded since 1988. All this has caused that the system BSE / cattle is very unstable in Poland since 1980. The Opinion says also that feeding MBM to cattle was legally possible until March 1997 and it is likely to have occurred even if it was uncommon practice. The efficiency of the feed ban can not be evaluated, as feed controls have not been carried out. The rendering is and has been common practice in Poland. The material for rendering plants includes ruminant material including SRM, condemned material and a limited portion of fallen stock. The rendering processes used were adequate for reducing BSE-infection since a long time. Cross contamination of feeding stuffs is most probable as there is no specified feed lines, any controls. BSE is noticeable since 1997 and surveillance was nearly non existent until 1997. Since 1997 passive surveillance does not fulfil OIE requirements. Active surveillance has started in 2001.

Based on that it is concluded that it is likely but not confirmed that one or several cattle that are pre-clinically or clinically infected with BSE agent are currently present in the country - GBR III.

Having in mind that the system BSE / cattle is very unstable and the fact that BSE agent is likely to be present in Poland it is assumed that the GBR is increasing.

This is an evaluation of GBR for Poland from the Scientific Steering Committee.

Poland has undertaken many steps in relation with BSE. As early as in 1988 training in BSE clinical signs, incidence, diagnosis, notification, eradication, legal regulation was introduced. More than 3500 veterinarians have been trained between 1988-2001. Surveillance has been introduced on March 26, 1996 - first by the letter of the Director General of the National Veterinary Research Institute (NVRI) in Pulawy and then with the announcement from the Chief Veterinary Officer. Based on these regulations all bovines with the neurological signs except rabies cases have to be submitted for testing for BSE with the histopathology. In June 1998 two scientific workers from the NVRI have been trained in BSE laboratory diagnosis at the Veterinary Laboratories Agency - Weybridge, New Haw, Addlestone, Surrey KT15 3NB, United Kingdom.

Notification was introduced with the New Veterinary Act issued April 24, 1997 Official Journal of Law No. 60, item 369, 1997 as BSE was put on a list of notifiable diseases. Before 1997 the notification of BSE was based on the Directive of the President of Polish Republic of August 22, 1927 ordering the official control of the diseases appearing in Poland for the first time (if happened).

The Directive of the Minister of Agriculture and Food Economy of June 16, 1998 introduced the ban on import to Poland of live bovine animals, beef, meat-and-bone meal, intestines and other products and raw materials of bovine origin from the United Kingdom, Republic of Ireland and Switzerland.

The Directive of the Minister of Agriculture and Food Economy of February 10, 1999 introduced the ban on import to Poland from Portugal of live bovine animals, beef, meat-and-bone meal, intestines and other products and raw materials of bovine origin.

In February 1999 the Minister of Agriculture and Rural Development introduced the prohibition on feeding of cattle with MBM. The Decision of the Chief Veterinary Officer on import to Poland from France of beef was released on November 6, 2000. All authorisations for import of live bovine animals from France to Poland has been withdrawn - in force November 8, 2000.

The Decision of the Chief Veterinary Officer of November 10 and 17, 2000 ordered the strict supervision of all bovine animals imported to Poland from European Union Member Countries. The County Veterinary Officers implement the decision and in case of death or emergency slaughter or normal slaughter of these animals they are obliged to send the brain samples from these animals to the National Veterinary Research Institute in Puławy for testing for BSE.

November 24, 2000 the Chief Veterinary Officer introduced the ban on import to Poland from Belgium, Germany, Spain, and the Netherlands of beef. All authorisations for import of live bovine animals from above-mentioned countries to Poland has been withdrawn - in force November 28, 2000.

In connection with the BSE situation in Europe the Prime Minister of Poland appointed the **BSE Risk Assessment Committee (BRAC)** on November 28, 2000 under supervision of Dr. Robert Gmyrek - the Secretary of the Ministry of Agriculture and Rural Development. The BSE Risk Assessment Committee has evaluated the following issues:

- legal regulations to protect the country against BSE,
- training of the Polish official veterinarians in BSE,
- surveillance of BSE in Poland,
- the way of feeding of bovines in Poland,
- the risk connected with possible use of MBMs in feeding stuffs for bovines,
- the risk connected with imports of live animals from regions affected with BSE,
- the risk connected with imports of MBMs from the EU Member Countries affected with BSE
- testing of bovines from risk population
- Emergency testing and Contingency Plans for BSE for Poland.

The Decision of the Chief Veterinary Officer of November 29, 2000 introduced the prohibition on import to Poland from Liechtenstein and Luxembourg of beef. All authorisations for import of live bovine animals has been withdrawn - in force November 29, 2000.

The Decision of the Chief Veterinary Officer of December 10, 2000, 0.00 hours put on the ban on import to Poland of meat-and-bone meals from Austria, Italy, Greece, Finland and Sweden. On December 14, 2000 the Decision of the Chief Veterinary Officer introduced the ban on transit through Poland of meat-and-bone-meals from all European Union Member Countries.

December 14-17, 2000 a group of 7 workers: 3 from the National Veterinary Research Institute in Puławy and 4 workers from regional diagnostic laboratories in Gdansk, Krakow, Warsaw, Wrocław appointed by the Chief Veterinary Officer were trained in Prionics A.G. in Zurich, Switzerland in diagnosing of BSE with the Prionics Check Kit. On January 15, 2001 the Prionics Check kits for BSE testing arrived in National Veterinary Research Institute in Puławy.

The Decision of the Chief Veterinary Officer of January 16, 2001 introduced the ban on import from Italy to Poland of live bovine animals, beef, offals, and intestines of bovine origin and products of bovine origin. On January 20, 2001 testing of bovine brains for BSE with the fast Prionics test was implemented.

Two variants of supervision of BSE has been accepted by the Polish Government on January 24-25, 2001:

Plan A - strict supervision and laboratory testing of animals from the risk groups:

- animals with neurological signs of illness,
- fallen cattle,
- emergency slaughtered bovines
- animals from imported cohort as well as
- 3% of bovines over 30 months of age slaughtered for human consumption.

Plan B - will be introduced in case the BSE in Poland will occur. It foresees testing of all bovines at the age of over 30 months slaughtered for human consumption and all animals at risk as listed above. All animals listed under Plan A will be tested with the Prionics Check. Within the frame of implementation of Plan A and Plan B all the bovine by-products, offals and parts of the carcasses considered as a Specified Risk Materials will be separated and incinerated in approved rendering plants.

The Decision of the Chief Veterinary Officer of February 6, 2001 introduced total ban on import to and transit through Poland of meat-and-bone meals, meat meals, bone meals and blood meals. All authorisations for this activity agreed by the Chief Veterinary Officer have lost their validity. On February 7, 2001 the Chief Veterinary Officer put into force the total ban on import to and transportation through Poland of bovine gelatine, bovine-swine gelatine as well as edible products containing bovine or bovine-swine gelatine subjected to the veterinary border inspection. Only gelatine of swine, poultry and fish origin are allowed to enter Poland after testing that it is not of bovine origin.

On March 5-7, 2001 the Contingency Plan for BSE was transferred to official veterinarians at the voivodeship level. Because of the new epidemiological situation in Europe on March 14, 2001 the crisis team for BSE and foot and mouth disease was established. The implementation of BSE monitoring according with Plan A was introduced on April 19, 2001.

However, the Polish Veterinary Service has undertaken the steps to protect country against BSE much earlier. The Polish Health Certificates for imported cattle put the following requirements:

- since 1987 – the animal should come from a holding in which no BSE cases has been reported during the last 5 years,
- since 1997 – the animal should come from a herd in which:
 - BSE has never been reported,
 - no bovine animals from Great Britain, Ireland, Switzerland were introduced up to the third generation back,
 - cattle has never been fed with MBM.

In the years 1998-1999 Polish Veterinary Inspectors appointed from the Chief Veterinary Officer certified the rendering plants in Belgium, Denmark and the Netherlands in respect of the permanent veterinary supervision, segregation of SRMs, and using the process of 133°C, 3 bars/20 min. 50x50 mm. This process is considered to decrease the BSE infectivity to a very low level or destroys it. The official veterinarians supervising the rendering plants of Germany and France have signed the certificates with such requirements! As it turned out on March 30, 2001 when the GBR assessment for Poland was published all these protective measures undertaken by the Polish Official Veterinary Service did not protect the country against introducing the high level of BSE infectivity coming from imported MBMs as well as animals imported from the EU Member Countries.

June 18, 2001 and because of the BSE case diagnosed in Czech Republic Polish Government decided to test all the animals over 24 months old slaughtered for human consumption.

No protective measures introduced by the Polish Government, no the results of the Prionics test, no statement that Polish cattle has not been fed with MBM could change the GBR level suggested for Poland. It seems that BSE issue is not only epidemiological issue!!!

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