Risk assessment report on beef and beef offal imported to Japan from Hungary (Prions/Self-tasking)

(Expert Committee on prions)

Food Safety Commission of Japan (FSCJ)
February, 2011

8. Hungary

(1) Live Cattle

a. Risk of BSE Invasion

Import of Live Cattle from BSE Risk Countries

Data on imported live cattle to Hungary are shown in Table 54. Figures in the table are taken from the questionnaire response by the Hungarian authority and the data of cattle exports from BSE risk countries to Hungary (Source: the World Trade Atlas. Trade statistics published by state governments are also used for some figures). Table 54 shows the number of cattle imported from the BSE risk countries only during the period when weighting factors are set.

According to the questionnaire response, Hungary banned importation of live cattle, beef, cattle products and cattle byproducts from the UK in 1987, when the first BSE case was reported. From 1987 to 2000, import from other BSE risk countries was allowed only when a certificate is attached to prove that the cattle was derived from a non-BSE-related population and it was not fed with ruminant-derived products. From 2001 to April 2004, import from other BSE risk countries was allowed only when the cattle was judged to be free from infection based the OIE code 2.3.13.2 and the exporting country was taking a same level of preventive measures as the EU regulations. Since May 2004, when Hungry joined the EU, import of live cattle has been carried out following the EU regulations (Regulation (EC) No 999/2001 of the European Parliament and of the Council for the prevention, control and eradication of certain transmissible spongiform encephalopathies).

The numbers of live cattle imported to Hungary from BSE risk countries between 1986 and 2007 included 516 from the UK, 26,435 from European countries with moderate contamination (the Netherland, Germany, Austria, etc.), and 128,935 from European countries with low contamination (Poland, Austria, Denmark, etc.).

Meanwhile, the number of live cattle exported to Hungary by BSE risk countries are recorded in the World Trade Atlas. Those numbers include 15,792 from European countries with moderate contamination (the Netherland, Germany, France and Italy) and 175,131 from European countries with low contamination (Czech, Poland, Austria, Denmark, etc.), 62 from the US and 16 from Canada.

Confirmation of BSE Infection with Imported Cattle

In September 2007, live cattle (aged over 30 months) imported from Slovakia for slaughter was confirmed BSE positive. The cattle was destroyed and disposed of.

Import of MBM from BSE Risk Countries

Data on imported MBM to Hungary are shown in Table 55 The figures in the table are taken from the questionnaire response by the Hungarian authority and the data on MBM exports from BSE risk countries to Hungary (Source: the World Trade Atlas. Trade statistics published by state governments are also used for some figures). Table 55 shows the amount of MBM imported from the BSE risk countries during the period for which weighting factors are set.

Hungary banned importation of live cattle, beef, beef products and beef byproducts from the UK in 1987. Import from other BSE risk countries was allowed only when a certificate is attached to prove that the cattle was derived from a non-BSE-related population and it was not fed with ruminant-derived protein till 2000. From 2001 to April 2004, import of beef products from countries with BSE cases was permitted only when the products were derived from cattle each of which was tested for BSE and proven negative in the results. According to the questionnaire response, MBM was imported to Hungary till April 2001 as an ingredient for pet food and pig and poultry feeds. After May 2001, MBM was used only for pet food. Since May 2004, when Hungary joined the EU, import has been conducted following the EU regulations.

For the import of MBM from BSE risk countries through1986 to 2007, the questionnaire response lists 452 tons from UK, 34,339 tons from European countries with moderate contamination (Germany, Italy, France, etc.), 3,853 tons from European countries with low contamination (Austria, Czech, etc.), and 126 tons from US. According to the response, collection of information on import of MBM to Hungary in and after 2005 has become unavailable at the livestock quarantine division, because starting May 1, 2004, when Hungary joined the EU, MBM can be brought in to Hungary through the border quarantine offices in other EU member states.

Meanwhile, the trade statistics recorded 9,984 tons of MBM exported from the UK, 88,735 tons from European counties with moderate contamination, 62,588 tons from European countries with low contamination.

Import of Animal Oil/Fat from BSE Risk Countries

The amount of import of oil/fat from BSE risk countries to Hungary is not known. As the reason for this, the questionnaire response from Hungary states that "the former editions of the OIE Code did not give instructions regarding animal fat/oil, furthermore the OIE questionnaire did not contain any question about importation of animal fat/oil we have not got any data on importation of animal fat and oil."

Assessment of the Use of Imported Live Cattle and MBM for Animal Feed

The questionnaire response by the Hungarian government states that there is no risk of imported live cattle and MBM being used for animal feed. For the reasons, the response lists (1) Hungarian rendering and supply system are sufficient enough to prevent exposure to the domestic cattle, and (2) MBM imported from countries with BSE cases may not become a risk due to the feeding customs and regulations. However, these measures are effective only for the domestic stability, not for the reduction of invasion risk *per se*. Accordingly, the whole amount of live cattle and MBM imported from BSE risk countries are treated as invasion risk.

While not stated in the questionnaire response, the amount of imported animal oil/fat is much smaller compared with the large amount of live cattle and MBM imported in the same periods, so the risk of animal oil/fat is relatively low. Therefore, the imported oil/fat, if any, is not likely to affect the level of the invasion risk.

Table 54. Import of Live Cattle from BSE Risk Countries experienced by Hungary

			1986-1990	1991-1995	1996-2000	2001-2005	2006-2007	Total
			Number of imported cattle	Number of imported cattle	Number of imported cattle	Number of imported cattle	Number of imported cattle	Number of imported cattl
Import data[1]	UK	Questionnaire	57	0	0	0	459	516
		Trade statistics	0	0	0	0	0	0
	Europe[3] (Countries with moderate contamination)	Questionnaire	340	1,038	7,080	5,094	12,883	26,435
		Trade statistics	0	471	7,600	3,847	3,874	15,792
	Europe[3] (Countries with low contamination)	Questionnaire	2	29,633	6,377	58,185	34,738	128,935
		Trade statistics	0	324	5,860	58,571	110,376	175,131
	USA	Questionnaire		0	0	0	0	0
		Trade statistics		0	28	34	0	62
	Canada	Questionnaire	0	0	0	0	0	0
		Trade statistics	0	7	9	0	0	16
	Others ( )	Questionnaire	0	0	0	0	0	0
		Trade statistics	0	0	0	0	0	0
	Total	**Questionnaire**	**399**	**30,671**	**13,457**	**63,279**	**48,080**	**155,886**
		Trade statistics	**0**	**802**	**13,497**	**62,452**	**114,250**	**191,001**

		1986-1990		1991-1995		1996-2000		2001-2005		2006-2007		Total
		Number of imported cattle	UK Equivalent	Number of imported cattle	UK Equivalent	Number of imported cattle	UK Equivalent	Number of imported cattle	UK Equivalent	Number of imported cattle	UK Equivalent	Number of imported cattle
Number of imported cattle with a potential of being a source of exposure	UK	57	5.70	0	0.00	0	0.00	0	0.00	459	0.46	516
	Europe (Countries with moderate contamination)	340	3.40	1,038	10.38	7,080	70.80	5,094	50.94	12,883	12.88	26,435
	Europe (Countries with low contamination)	2	0.00	29,633	296.33	6,377	63.77	58,185	581.85	34,738	34.74	128,935
	USA			0	0.00	0	0.00	0	0.00	0	0.00	0
	Canada	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
	Others ( )	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
	Total	**399**	**9.10**	**30,671**	**306.71**	**13,457**	**134.57**	**63,279**	**632.79**	**48,080**	**48.08**	**155,886**
		Very low		**High**		**High**		**High**		**Moderate**		

(Reference) Numbers calculated using the figures in the trade statistics.

Trade statistics[2]	Total	**0**	**0.00**	**802**	**7.95**	**13,497**	**134.60**	**62,452**	**624.18**	**114,250**	**114.25**	**191,001**
		Negligible		**Very low**		**High**		**High**		**High**		

1: 'Number of cattle imported' and 'Number of imported cattle with a potential of being a source of exposure' cover only the period when weighting factors are set.

2: We regard all the cattle as a source of exposure because the exact number is unknown from the trade statistics as to how many of

the imported cattle were not a source of exposure.

3: In addition to this number, import of 116 tons of live cattle from countries with moderate contamination (Germany, France, and Switzerland) and 666,000 USD worth of import from countries with low contamination (Poland) are reported in the trade statistics. (When the volume of imported live cattle is indicated only in the weight or in the monetary value and not in the number of animals, that volume is not included in the assessment.)

Table 55. Import of MBM from BSE Risk Countries experienced by Hungary

			1986-1990	1991-1995	1996-2000	2001-2005	2006-2007	Total
			Volume of importation (ton)	Volume of importation (ton)	Volume of importation (ton)	Volume of importation (ton)	Volume of importation (ton)	Volume of importation (ton)
Import data[1]	UK	Questionnaire	0	0	0	452		452
		Trade statistics	0	0	0	4,449	5,527	9,984
	Europe (Countries with moderate contamination)	Questionnaire	3,653	4,431	13,579	12,675		34,339
		Trade statistics	900	2,092	14,028	53,578	18,137	88,735
	Europe (Countries with low contamination)	Questionnaire	0	0	3,338	515		3,853
		Trade statistics	0	0	48,532	9,053	5,003	62,588
	USA	Questionnaire		0	0	126		126
		Trade statistics		0	0	0	0	0
	Canada	Questionnaire	0	0	0	0		0
		Trade statistics	0	0	0	0	0	0
	Others ( )	Questionnaire	0	0	0	0		0
		Trade statistics	0	0	0	0	0	0
	Total	**Questionnaire**	**3,653**	**4,431**	**16,917**	**13,768**	**N/A**	**38,770**
		Trade statistics	**900**	**2,092**	**62,568**	**67,080**	**28,667**	**161,306**

		1986-1990		1991-1995		1996-2000		2001-2005		2006-2007		Total
		Volume of importation (ton)	UK equivalent	Volume of importation (ton)	UK equivalent	Volume of importation (ton)	UK equivalent	Volume of importation (ton)	UK equivalent	Volume of importation (ton)	UK equivalent	Volume of importation (ton)
Volume of Imported MBM with a potential of being a source of exposure	UK	0	0.0	0	0.0	0	0.0	452	4.5			452
	Europe (Countries with moderate contamination)	3,653	328.6	4,431	182.5	13,705	287.5	12,550	125.5			34,339
	Europe (Countries with low contamination)	0	0.0	0.1	0.0	3,338	33.4	515	5.2			3,853
	USA			0	0.0	0	0.0	126	0.0			126
	Canada	0	0.0	0	0.0	0	0.0	0	0.0			0
	Others ( )	0	0.0	0	0.0	0	0.0	0	0.0			0
	Total	**3,653**	**328.6**	**4,431**	**182.5**	**17,043**	**320.9**	**13,642**	**135.2**			**38,770**
		High		**High**		**High**		**High**		**Unknown**		

(Reference) Numbers calculated using the figures in the trade statistics.

Trade statistics[2]	Total	**900**	**90.0**	**2,092**	**100.3**	**62,568**	**745.8**	**67,080**	**670.8**	**28,667**	**28.7**	**161,306**
		Moderate		**High**		**High**		**High**		**Moderate**		

1: 'Volume of MBM imported' and 'Volume of imported MBM that can be a source of exposure' are calculated only for the period when weighting factors are set.

2: We regard all of the MBM as a source of exposure because the exact number is unknown from the trade statistics as to how many of the imported MBM were not a source of exposure.

Assessment for external challenge

External challenge was evaluated based on the questionnaire response by the Hungarian government. The level of invasion risk between 1986 and 1990 was 9.1 in UK equivalent for live cattle and regarded 'very low'. The invasion risk level between 1991 and 1995 was 306.7 and regarded 'high'; 1996 - 2000 was 134.6 and regarded 'high'; 2001 - 2005 was 632.8 and regarded 'high'; and 2006 - 2007 was 48.1 and regarded 'moderate'.

The UK equivalents obtained in evaluation of invasion risk levels using trade statistics were less than 0 and regarded 'negligible' for the period 1986 - 1990, 8.0 and regarded 'very low' for the period 1991 - 1995, 134.6 and regarded 'high' for the period 1996 - 2000, 624.2 and regarded 'high' for the period 2001 - 2005, and 114.3 and regarded 'high' for the period 2006 - 2007. For 2006–2007, the values differ greatly among the questionnaire response and the trade statistics. The level of invasion risk was larger when the data in the trade statistics were used. This is due to the difference of the number of live cattle imported from Slovakia in these two kinds of data (4,527 in questionnaire response and 96,539 in the trade statistics). According to the trade statistics, the numbers of live cattle exported from Slovakia were 1,783 (2002), 2,795 (2003), 2,399 (2004), and 6,619 (2005). In 2006, the number increased to 96,539, a drastic change compared with the last four years. When compared with the numbers of cattle reared in Hungary (806,364 in 2005, 802,808 in 2006, and 796,814 in 2007) and the number of cattle slaughtered (125,840 in 2006), it is not very feasible to say that the all cattle exported from Slovakia to Hungary in 2006 as reported in the trade statistics were reared and slaughtered after imported to Hungary. Also, in the data by the EUROSTAT, the number of export from Slovakia to Hungary was reported as 96,538, which matches with the number in the trade statistics, but the number of cattle imported from Slovakia to Hungary was reported as 2,341. Thus, discrepancy between the numbers is observed in the EUROSTAT data. This clear discrepancy between the numbers in the questionnaire response from the Hungarian government and by the EUROSTAT can be caused by some improper statistical treatment of trade data, such as how to treat the transit (products transported to other countries via Hungary). Considering these data together, we concluded that the data reported by the Hungarian government in the questionnaire response, which are closer to the EUROSTAT, should be more appropriate than the trade statistics to use for the number live cattle imported from Slovakia. Accordingly, the data in the questionnaire response were used for this report.

The UK equivalents for MBM were 328.6 for the period between 1986 and 1990 and the external challenge resulting from MBM import was regarded 'high'. The UK equivalent for MBM for other periods were 182.5 and regarded 'high' for 1991–1995, 320.9 and regarded 'high' for 1996–2000, and 135.2 and 'high' for 2001–2005. As described before, the data were not available for the import in and after 2004. The UK equivalents obtained in evaluation of invasion risk levels using trade statistics were 90.0 and regarded 'moderate' for 1986–1990, 100.3 and regarded 'high' for 1991–1995, 745.8 and regarded 'high' for 1996–2000, 670.8 and regarded 'high' for 2001–2005, and 28.7 and regarded 'moderate' for 2006–2007. For the period between 1986 and 2003, for which some of the figures do not match between the questionnaire response and trade statistic, the figures in the questionnaire response were used because using the values in the trade statistics did not result in higher values of invasion risk than when the values in the questionnaire response were used. For the period in and after 2004, the evaluation was conducted based on the trade statistics due to the lack of data in the questionnaire response.

Based on what described above, the overall invasion risk (combination of risks by imported live cattle and MBM) was regarded 'high' for the period between 1986 and 2005 and 'moderate' for the period between 2006 and 2007 (Table 56).

Table 56. External Challenge experienced by Hungary

	1986-1990	1991-1995	1996-2000	2001-2005	2006-2007
Live cattle	**Very low**	**High**	**High**	**High**	**Moderate**
MBM	**High**	**High**	**High**	**High**	**Moderate**
Overall Level	**High**	**High**	**High**	**High**	**Moderate**

b. Domestic Stability (BSE propagation risk of the country)

Feed regulations

As for the feed regulations associated with BSE, feeding of ruminant-derived protein to ruminants was banned in 1990. Then in 1997, feeding of mammal-derived protein to ruminants was banned, and in 2001, feeding of all kinds of animal protein (except for milk and milk products) to ruminants as well as feeding of dead animals and MBM derived from slaughtered ruminants to other kinds of livestock animals (i.e. non ruminants) were banned. In 2003, feeding of all kinds of animal protein (except for fish meal, hydrolyzed protein, dicalcium phosphate, and tricalcium phosphate) to other kinds of livestock animals (i.e. non ruminants) were legally banned.

The rearing style at cattle farms in Hungary is similar to that of Japan. Calves of dairy cattle are fed with milk replacer or colostrum in the first month and then with calf starter, roughage and supplemental feed from the one month to 6 months old. Growing cattle of 6 month old or older and adult cattle are fed with roughage and supplemental feed. For the beef cattle, calves of 0 to 2 or 3 months old are fed with mother's milk, milk replacer, roughage, and compound feed, and growing cattle of 3 months old or older are fed with roughage and supplemental feed. Adult male cattle are slaughtered at 12 to 14 months old.

According to the questionnaire response, although small in number, the mixed rearing (a style of farming where cattle are reared with pigs and/or poultry in a same premise) is practiced especially in small farms where 10 or less number of animals are raised. In 2003, Hungary implemented a law which states: "Feeds containing fish meal, bone-derived di-calcium phosphate and hydrolysed protein shall not be kept on holdings where ruminants are kept and in such cases may not be used for feeding other farmed species kept on the holding." The questionnaire response also states that the results of analyses on feeding and rendering systems in Hungary found that MBM is not fed to ruminants (instead, ruminants are fed with urea, a cheaper alternative). It also reports that all animal-derived MBM is composted and used as organic fertilizer.

The pubic assessment on compliance of feed manufacturing and distribution regulations is carried out by the official veterinarians and the feed inspectors of the County Food Chain Safety and Animal Health Directorate of the County Agricultural Office (former the county animal health and food control stations). Since 1999, a total of 752 inspections are carried out for feed mills that process cattle-derived materials and no violation has been found. On the basis of investigations of the product-sheets approved by the county animal health and food control stations between 1993 and 2000, the most part of the feeds intended for ruminants did not contain any animal protein, and even in the cases where protein was found, only milk powder, fish meal, feather meal, poultry offal meal and similar products were detected but no meat and bone meal or greaves were detected.

For cattle feed sampling for animal protein contamination, the ELISA test was used till 2002. Since 2003, the microscopic method has been used as an official method according to the EU legislation. According to the response, these investigations showed the presence of processed animal protein in feeds and raw materials only in a few cases and mainly in case of the imported fish meal.

Use of SRM

On the basis of internal instruction of April 30, 2001, the following parts of the ruminants were considered as SRM in Hungary. (1) the skull including the brain, eyes and the tonsils of cattle aged over 12 months; (2) the vertebral column (excluding the caudal vertebrae, and including dorsal root ganglia) and spinal cord of cattle aged over 12 months; (3) the intestines from the duodenum to the rectum of cattle of all ages; (4) all part of the dead cattle aged over 12 months; and (5) all part of the cattle killed because of the TSE infection or by the suspicion of

TSE infection. Later in July 2003, the legislation of the Minister of Agriculture modified the list of SRM slightly as: (1) the skull, including the brain, eyes and tonsils of cattle aged over 12 months; (2) the vertebral column (excluding the caudal vertebra, lumbar vertebra, the transverse processes of the dorsal vertebra and the wing of the sacrum, and including the dorsal root ganglia) and the spinal cord of animals over 12 months; (3) the intestines and mesentery of cattle of all ages; and (4) all part of the dead cattle. Since May 2004, when Hungary became a member state of EU, the definition of SRM in Hungary is the same as it written down in the EU regulation. Specifically, the following tissues are designated as SRM if they come from cattle whose origin is in a Member State or third country or of one of their region with a controlled or undetermined BSE risk: (1) the skull (excluding the mandible and including the brain and eyes) and the spinal cord of cattle aged over 12 months; (2) the vertebral column (excluding the vertebrae of the tail, the spinous and transverse processes of the cervical, thoracic and lumbar vertebrae, the median sacral crest, and wings of the sacrum, but including the dorsal root ganglia) of cattle aged over 24 months (since April 2008, cattle aged over 30 months are subject); and the tonsils, the intestines from the duodenum to the rectum and the mesentery of animals of all ages.

Regarding the use of SRM in Hungary, while the questionnaire response confirms that SRM was not used for cattle feeds and fertilizers during the period between 1986 and 2000, no precise statistics exist for use as foodstuff and non-cattle feeds. In and after 2001, all SRM, emergency slaughter cattle, and bovines condemned at antemortem are incinerated after rendering, according to the questionnaire response.

Cattle died at farms are also incinerated after rendering following the regulation (except for farms in local areas, where it is legally permitted to bury cattle died at farms).

Rendering Conditions

Since January 1982, the batch process (at least 133ºC, 3 bar, 20 min) has been legally prescribed during rendering of animal waste. The legislation in Hungary prescribes that "high-risk materials" (those suspected of presenting serious health risk to animals or man) should be comminuted into pieces of 5 cm prior to processing and kept under the pressure of 3 bars on the core temperature of 133ºC for at least 20 minutes. The compliance of rendering regulations has been verified at both central and local levels by regular inspection in processing plants based on checklists. Since 1999, a total of 127 inspections have been conducted and no violation has been detected.

Measures to Prevent Cross-contamination

In Hungary, control of animal-derived feed materials is considered as the most important element of prevention of cross-contamination. The control is carried out for different control points: feed mills; transportation; and farms.

The number of feed mills that process both ruminant feeds and non-ruminant feeds made with mammal-derived MBM was 70 in 1999, but there has been no such mill since February 2004.

There were 8 rendering plants that process mammal byproducts that may contain bovine materials in 1999. The number of such facilities in 2006 was 3, indicating progressing specialization of rendering facilities. As of 2001, SRM and dead animals are processed only at designated facilities.

Others

In 2006, 14 cases of scrapie were confirmed among sheep. These animals were incinerated after rendering.

Assessment of Domestic Stability

The domestic stability was assessed based on the questionnaire response by the Hungarian government. Our assessment revealed that the risk of exposure/propagation was "moderate"

(1986–1990), ”low” (1991–1997), “very low” (1998–2001), and “negligible” (2002–2007) in Hungary (Table 57, Table 58).

Table 57. Domestic Stability in Hungary

Item	Status
Feeding	1990: Ban on feeding of ruminant-derived protein to ruminants 1997: Ban on feeding of mammal-derived protein to ruminants 2001: Ban on feeding of all kinds of animal protein to ruminants 2001: Ban on feeding of MBM derived from slaughtered ruminants and dead animals to livestock 2003: Ban on feeding of all animal proteins to other livestock
Use of SRM	2001: SRM defined. 2004: EU definition was adopted (Hungary joined EU) [SRM] Before definition: Use as foodstuff and non-bovine feeds are suspected. After definition: Incinerated after rendering. [Cattle died at farm] After definition: Incinerated after rendering (buried in some areas). [Emergency slaughter, bovines condemned at antemortem] After definition: Incinerated after rendering.
Rendering conditions	1982: The condition of 133ºC, 3 bar, 20 min. at a minimum was obliged. 1997: "High-risk materials" must be comminuted into pieces of 5 cm prior to processing and processed under 133ºC, 3 bar, 20 min.
Measures to prevent cross-contamination	[Feed mills] No mixed facilities since 2004. [Rendering facilities] Specialization is under progress after 2001. As of 2001, SRM and dead animals are processed only in specialized facilities.

Table 58. Assessment of Domestic Stability in Hungary

	Feeding	Use of SRM, Rendering Conditions, Preventive measure against cross-contamination, etc.	Risk of exposure/propagation
1986–1990	No specific regulations	Rendering conditions: 133ºC/3 bar/ 20 min (since 1982)	Moderate
1991–1997	Ban on feeding of ruminant-derived protein to ruminants		Low
1998–2001	Ban on feeding of mammal-derived protein to ruminants		Very low
2002–2007	(2001) Ban on feeding of all kinds of animal protein to ruminants (2001) Ban on feeding of MBM derived from dead animals and slaughtered ruminants to livestock	SRM and dead animals are processed only at specialized facilities and all of them are incinerated after rendering.	Negligible

	(2003) Ban on feeding of all animal proteins to other livestock		

c. Verification by surveillance, etc.

Population Structure

The total cattle population in Hungary was 797,000 in 2007. Among them, 415,000 were reported as 2 years old or older.

Surveillance Outline

Between 1989 and March 2001, BSE surveillance was conducted following the OIE code. All brains of the ruminants showing any neurological sign were examined for BSE with histopathological method. Also, in the compulsory nationwide monitoring system, the brains of the slaughtered or culled ruminants, as well as of the cattle older than three years and the sheep older than two years (including those died without showing any neurological sign) were examined.

Active surveillance was started in March 2001 and monitoring was conducted for: (1) bovine animals aged over 24 months which died without any neurological sign, or killed ones; (2) all emergency slaughtered bovine animals aged over 24 months; and (3) bovine animals aged over 30 months subject to normal slaughter. After February 2002, BSE surveillance became compulsory for all bovine animals aged over 30 months subject to normal slaughter.

After June 25, 2003, BSE surveillance has been conducted following the EU regulations. The monitoring of risk animals are conducted for all cattle over 24 months of age that are subject to special emergency slaughtering, i.e. the cattle that show symptoms of disease or of a disorder of their general condition, fallen stock and those died on farm. Among the healthy animals, cattle subject to normal slaughter that are over 30 month of age are subject for monitoring.

Sampling and sending samples are conducted based on the "sampling method laid down in TSE Contingency Plan." Samples from TSE suspect animals or other ruminants showing neurological clinical signs are taken by the official veterinarians from animals killed on the basis of the order of the district veterinary officer. In case of bovine animals that have died on farm, samples are collected by the approved veterinarian, who is responsible for the animal health on the given farm. Samples taken from animals subject to normal slaughter are collected by the official veterinarian.

Until March 2001, the histopathological method was the only method used for BSE tests. After March 2001, ELISA and immunohistochemistry (IHC) have been used. The Western blot method has been used for as confirmatory tests since 2006.

From 1989 to 2000, passive surveillance was conducted for a total of 1,806 animals. All tests were resulted negative. From 2001 and 2006, a total of 442,708 animals became subject for surveillance. No positive result has been detected. Whilst surveillance outcome over the 7 year period (2000 to 2006) was assumed enough to meet the standard which "will allow the detection of BSE around a design prevalence of at least one case per 100,000 in the adult cattle population, at a confidence level of 95%" as stipulated by OIE (Table 59).

Table 59. Surveillance Point Calculation in Hungary

Number of cattle population (2007): 415,000* → 120,000 points are needed in seven years.

Number of animals surveyed					
Year	Routine slaughter	Fallen stock	Casualty slaughter	Clinical suspect	**Total**
2000	92	21	0	75	**188**
2001	9,821	602	754	82	**11,259**
2002	63,293	1,808	4,422	69	**69,592**
2003	86,595	6,532	4,263	98	**97,488**
2004	81,461	12,562	2,479	62	**96,564**
2005	67,864	13,378	2,485	38	**83,765**
2006	67,440	13,794	2,581	37	**83,852**
Total	376,566	48,697	16,984	461	**442,708**
Surveillance points	(× 0.2) 75,313	(× 0.9) 43,827	(× 1.6) 27,174	(× 750) 345,750	**492,065** **(Goal achieved)**

Notes:

- Surveillance points were compared with the points needed by the OIE Type A Surveillance.
- Surveillance points were calculated under an assumption that all the animals are 4 years old or older and less than 7 years old.
- The cattle population was calculated according to the data on the population of cattle over 24 months of age in the Questionnaire response by the Hungarian government.

BSE Awareness Program and Mandatory Notification

Hungary has education program regarding TSEs. Since 1991 the BSE and other TSEs have been a part of education in the Hungarian Veterinary University (including postgraduate courses). Since 1991, researchers have been invited from other countries to give seminars for the Hungarian veterinary researchers. The County Food Chain Safety and Animal Health Directorates of the County Agricultural Office (former: County Animal Health and Food Control Stations) hold training regularly for veterinarians working in the county. During the training, veterinary experts make known the new information regarding notifiable disease, including BSE. All county animal health and food control stations have organized trainings for the veterinarians, farmers and workers in the cattle farms and slaughterhouses. To call the farmers' attention to the BSE question, media are used such as television, radio and newspapers at every opportunity.

Starting in July 1996, BSE is a compulsorily notifiable disease in Hungary. It should be also noted that even years before BSE became a compulsorily notifiable disease, it was already compulsory to report each ruminant showing any neurological signs as a suspicious case of rabies, and since 1989 these animals have been investigated for BSE (or scrapie) besides tests for rabies at the laboratory. Compensation is paid to the owners of the animals subject to BSE by the government.

(2) Beef and Beef Offal

a. SRM Removal

Methods of SRM Removal, etc.

According to the questionnaire response, the head (including cerebrum and cerebellum, eyes, trigeminal ganglia, and tonsil but excluding tongue and cheek meat), spinal cord of cattle aged over 12 months; vertebral column of cattle aged over 30 months; and tonsil, intestines between the duodenum to the rectum, and mesentery of cattle of all ages are removed from foodstuff intended for export to Japan. Other parts (head and spinal cord of cattle at the age of 12 months or younger and vertebral column of cattle at age of 30 month old or younger) are not imported to Japan following a notice sent to importers, which instructs them to voluntarily refrain from SRM import. The SRM removed during the slaughtering processes is stored in a specialized container marked "SRM" and painted with heat-resistant blue dye. Collected SRM is processed in one of the 2 domestic category 1 rendering (processing) facilities and disposed of in one of the approved high functional co-incineration plants.

Splitting operation is a common practice in slaughterhouses in Hungary. Saws used for splitting are washed with and sterilized after use (before the use for the next carcass). The blades are changed for a cleaned one or a new one after each 50 animals. After splitting, the spinal cord and dura mater spinalis are removed from the vertebral column with a special, signed knife. According to the questionnaire response, washing of carcasses with high-pressure water after the removal of spinal cord is not carried out in Hungary. Official veterinarians confirm for the complete removal of spinal cord.

Tonsils are removed by governmental officers at the time of meat inspection. The meat inspector confirms the complete removal.

As for the distal ileum, after stomachs are separated and bound, the whole intestine between duodenum to the rectum is collected in a container specially designated for SRM. The removal of distal ileum is confirmed by official veterinarians at the postmortem inspection.

Control based on (SSOP) and (HACCP)

Control based on the Sanitary Standard Operation Procedure (SSOP) and Hazard Analysis Critical Control Point (HACCP) is carried out following the regulations by the European Parliament and European Council. Implementation of HACCP is a mandatory requirement for all slaughterhouses and meat plants. The SSOP system is adopted by all slaughterhouses and meat processing facilities that are approved for export to the US.

The governmental office manages the control points relating to BSE control. Typical control points include inspection of head (including eyes and tonsils), inspection of intestines, removing of spinal cord after splitting, and removal of vertebral column of the animals over 24 months of age during deboning.

Additional Requirements, etc. for Export to Japan

According to the questionnaire response, products intended for export to Japan must meet the requirements listed in the certificate necessary for the export to Japan. For example, one of the requirements is that "All meat intended for export to Japan must be derived from animals born and raised solely in Hungary."

b. Slaughtering Processes

Antemortem inspection and BSE testing at the slaughter houses

At the antemortem inspection, control of identification and clinical testing are conducted. Instruction on the normal slaughtering, prohibition of slaughtering or an order for culling is made.

In Hungary, all cattle subject to routine slaughtering at age of 30 months or older are tested for BSE. At slaughterhouses, official veterinarians take samples, and samples are tested by national or local research institutes.

Stunning and Pithing

The use of compressed air/gas injection into bovines' cranial cavity for stunning is banned based on a Hungarian regulation. The cattle slaughterhouses use captive bolt pistol for stunning.

Pithing has been banned since 2001. Since the accession to the EU in May 2004, pithing is banned on the basis of EU regulation.

c. Others

Mechanically Recovered Meat (MRM)

Production of mechanically recovered meat (MRM) was banned based on a Hungarian regulation since 2001. MRM has been banned on the basis of EU regulation since the accession to the EU in May 2004.

Traceability

Identification of animals is mandatory based on the Zoo Sanitary Code. Since 1997, a computerized, centralized identification and registration system (ENAR) has been operated. The ENAR-code, gender, species, date of birth, country of origin, and other information are recorded.

Currently, the ratio of cattle whose age can be determined through the identification system of all the reared population. is 100.

Number of Slaughterhouses and Number of Slaughtered Animals

There are 70 slaughterhouses in Hungary (as of 2007). Among them, 1 facility is designated as exporting facility for Japan (processing meat for domestic consumption and export to other countries, as well as for export to Japan in this facility). The number of cattle slaughtered in the data of 2006 was 125,840, including 65,630 healthy animals at the age over 30 months. At the biggest slaughterhouse in Hungary, where products were processed for export to Japan in 2007, 28,480 animals are slaughtered annually. Also two meat inspectors and two official veterinarians are stationed.

There are 8 meat plants that process products intended for export to Japan. All of these plants process meat both for domestic consumption/export to other countries and for export to Japan.

d. Assessment of Risk-reducing Measures at Meat Processing Lines

Based on the questionnaire response by the Hungarian government, the risk-reducing measures at meat processing lines in Hungary were assessed. The risk-reducing efficacies of the measures were recognized either 'very high' (Table 60).

Table 60. Summary of Assessment for Hungary

		Measure	Judge
Current Practice of SRM Removal	Definition of SRM	2004: SRM was defined as:(Regulation (EC) 999/2001) - the skull excluding the mandible and including the brain and eyes, and the spinal cord of cattle aged over 12 months - vertebral column (including dorsal root ganglia) of cattle aged over 30 months - the tonsils, intestines from the duodenum to the rectum, and mesentery of cattle of all ages	**SRM is removed based on the regulations of the specific country【Methods of practice, etc.: Very good】**
	Removal of SRM	[Meat to be exported to Japan] - Head, spinal code: aged over 12 months - Vertebral column: aged over 30 months - Tonsil, intestines from the duodenum to the rectum, and mesentery: of all ages - Other parts (head and spinal cord of cattle aged less than 12 month and vertebral column of cattle aged 30 months or younger) are not exported to Japan following a notice sent to importers, which instructs them to voluntarily refrain from SRM import.	
	Methods, etc.	Split saws are washed after every animal. Carcasses are not washed after the removal of spinal cord. Official veterinarians check for residual spinal cord on the carcasses. HACCP is implemented in all meat processing plants. SSOP is implemented in facilities processing products for US exports.	
Inspection at slaughter houses Stunning and pithing	Inspection at slaughterhouse	- At the ante mortem inspection, instruction on the normal slaughtering, prohibition of slaughtering and order for culling is given. - All cattle subject to routine slaughtering at age of 30 months or older are tested for BSE. At slaughterhouses, official veterinarians take samples, and samples are tested by national or local research institutes.	**Very good**
	Stunning with injection of pressured air or gas into the skull	Not practiced.	
	Pithing	Not practiced.	
MRM		Not produced (prohibited by law).	
Additional requirements, etc. for export to Japan		- Requirements must be met listed in the certificate necessary for export to Japan.	
Livestock Hygiene Requirements		[Place of birth and other information]	

	Measure	Judge
	All meat intended for export to Japan must be derived from animals born and raised solely in Hungary.	
Administrative guidance on import of beef for human consumption, etc. by notice	Importing companies are instructed to withhold import of SRM for human consumption even from non-affected countries in order to prevent possible confusion in case BSE occurs in that country.	
Assessment of risk-reducing measures	**Efficacy of risk-reducing measures: 'very high'**	

(3) Conclusion

The evaluation of beef and beef-offal imported from Hungary, based on the Hungary's responses, resulted in our consideration that the external challenge is "high" between 1986 and2005 and "moderate" (2006–2007). In addition, the risk against domestic stability was considered that risk of exposure/propagation was "moderate" (1986–1990), "low" (1991–1997), "very low" (1998–2001), and "negligible" (2002–2007).

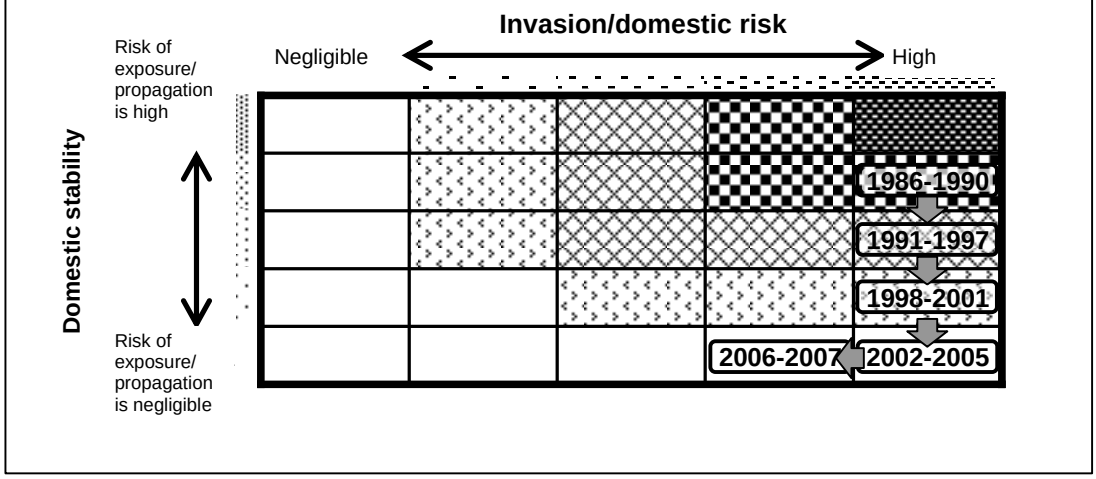
Based on the results of assessments for external challenge and risk against domestic stability, while the possibility that BSE exposure/propagation have occurred in the past in Hungary cannot be denied, the domestic stability has improved in more recent years, and, therefore, the current risk of BSE exposure/propagation in Hungary is considered to be low.

The surveillance so far has turned out to be with no BSE positive cattle, thus the surveillance outcome over the 7 year period (2000 – 2006) was assumed enough to meet the standard which "will allow the detection of BSE around a design prevalence of at least on e case per 100,000 in the adult cattle population, at a confidence level of 95%" as stipulated by OIE. Risk-reducing efficacy at the meat processing lines was assessed as "very high."

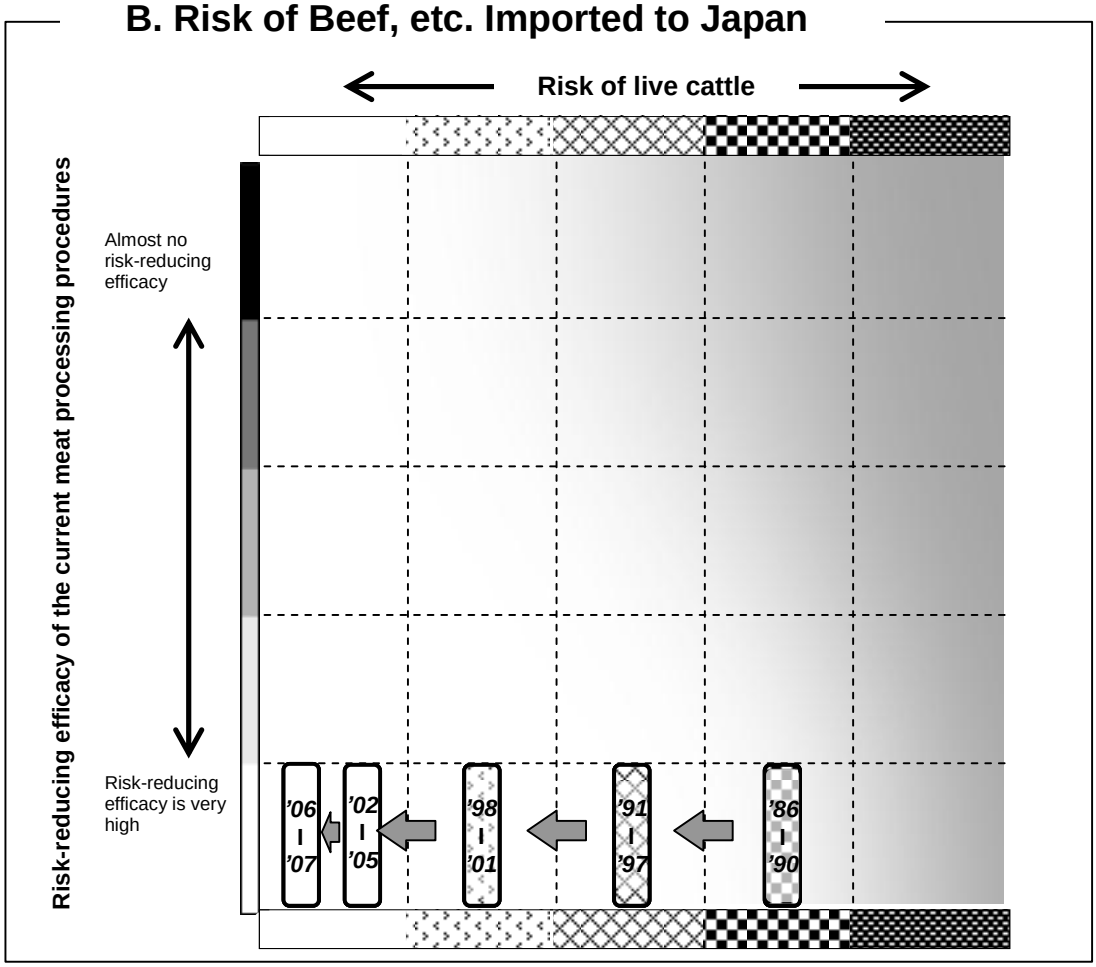
Judging from those presented above, the potential risk of BSE exposure/propagation in Hungary is considered low, and the risk-reducing efficacy at the meat processing lines was assessed as "extremely effective" Therefore, the risk of BSE prion contamination in beef and beef-offal imported from Hungary is considered to be negligible.

＜Reference: Hungary>

A. Risk of Live Cattle



B. Risk of Beef, etc. Imported to Japan



Periods show the birth cohort years (birth years of cattle)