

**Risk assessment report on beef and beef offal imported to Japan from Brazil
(Prions/Self-tasking)
(Expert Committee on prions)**

Food Safety Commission of Japan (FSCJ)
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7. Brazil

(1) Live Cattle

a. Risk of BSE Invasion

Import of Live Cattle from BSE Risk Countries

Data on imported live cattle to Brazil are shown in Table 47. Figures in the table are taken from the questionnaire response by the Brazilian authority and the data of cattle exports from BSE risk countries to Brazil (Source: the World Trade Atlas. Trade statistics published by state governments are also used for some figures). Table 47 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, Brazil banned importation of live cattle from the countries with BSE cases or suspected cases of BSE in 1990. In addition, importation of ruminant animals and ruminant-derived products originated in countries with BSE cases was banned in 2001. In 2004, importation of ruminant animals and ruminant-derived products originated in countries with BSE cases or suspected cases of BSE was banned. The numbers of live cattle imported to Brazil from BSE risk countries between 1986 and 2007 included 184 from the UK, 5,605 from European countries with moderate contamination (Belgium, France, Germany, Italy, Luxemburg, the Netherlands, and Switzerland), 579 from European countries with low contamination (Austria and Denmark), 3,730 from the US, 2,281 from Canada, and 257 from other countries (Hungary, Mexico, and Chile).

Meanwhile, the number of live cattle exported to Australia by BSE risk countries are reported in the World Trade Atlas. Those numbers include 94 from European countries with moderate contamination (Italy, France, the Netherland, Switzerland and Germany), 199 from European countries with low contamination (Denmark and Poland), 8,161 from the US, and 3,102 from Canada.

Import of MBM from BSE Risk Countries

Data on imported MBM to Brazil are shown in Table 48. The figures in the table are taken from the questionnaire response by the Brazilian authority and the data on MBM exports from BSE risk countries to Brazil (Source: the World Trade Atlas. Trade statistics published by state governments are also used for some figures). Table 48 shows the amount of MBM imported from the BSE risk countries only during the period for which weighting factors are set.

According to the questionnaire response, Brazil banned importation of ruminants and ruminant-derived products originated in countries with BSE cases in 2001. In 2004, Brail banned importation of ruminant animals and ruminant-animal-derived products originated in countries with BSE or countries with BSE risks. The amount of MBM imported from BSE risk countries to Brazil between 1986 and 2007 was 0.2 ton from European countries with moderate contamination (France) and 173 tons from the US.

Meanwhile, the trade statistics recorded 299 tons of MBM export to Brazil from the US.

Import of Animal Oil/Fat from BSE Risk Countries

According to the questionnaire response by Brazilian government, animal oil/fat was imported from BSE risk countries, including 0.17 tons from the UK, several to several hundred tons from European countries with moderate contamination (Belgium, the Netherlands, France, Italy, Spain, Germany, etc.), and about 8,500 tons from the US.

Since 2004, when the use of animal-derived products for ruminant animal feeds was banned, animal oil/fat reportedly has not been used for ruminant animal feeds.

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

To assess the possible source of exposure among the imported cattle, animals applicable for the following criteria were exempted from consideration as risk animals based on the questionnaire response by the Brazilian government.

- (1) Cattle that was alive at the time of inspection, and
- (2) Cattle died at a farm, etc. and can be proved that it was not transported to a slaughterhouse (including the adjacent rendering facility).

These animals are excepted because it can be assumed that they were not rendered and not used for animal feed. The numbers of imported live cattle with a potential of being a source of exposure for the period between 1986 and 1990 were regarded as: 8 out of 184 head of cattle imported from the UK, 31 out of 104 from European countries with moderate contamination, 3 out of 21 from European countries with low contamination, and 384 out of 459 from Canada.

From 1991 through 1995, 1510 out of 5,433 head of cattle imported from European countries with moderate contamination, 92 out of 558 imported from European countries with low contamination, 1,480 out of 2,031 from the US., 94 out of 295 from Canada, and 4 out of 70 from other countries (Hungary) were regarded as carrying the possibility of being a source of exposure.

From 1996 to 2000, 17 out of 68 head of cattle imported from European countries with moderate contamination, 552 out of 843 from the U.S., 679 out of 1,308 from Canada, and 154 out of 187 from other countries (Mexico and Chile) were regarded as carrying the possibility of being a source of exposure.

From 2001 to 2005, 476 out of 856 imported from the U.S. and 128 out of 219 from Canada were regarded as carrying the possibility of being a source of exposure.

The live cattle imported from Hungary, Chile, and Mexico was regarded to have low possibility to affect the level of invasion risk based on the low number of the cattle imported.

The whole volume of MBM imported to Brazil was regarded to have risk because the number of tons indicated in the import data as import from BSE risk countries matches the number of tons regarded as carrying the possibility of being a source of exposure.

In regard with animal oil/fat, even though a rather large amount of those materials was imported from the U.S., the possibility to affect the level of invasion risk was evaluated to be low. This is based on the amount of import as well as on the fact that the Brazilian government has adopted a ban on the use of these materials for ruminant animal feeds since 2004.

Table 47. Import of Live Cattle from BSE Risk Countries experienced by Brazil

		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 cattle	
Import data ¹	UK	Questionnaire	184	0	0	0	0	184
		Trade statistics	0	0	0	0	0	0
	Europe ³ (Countries with moderate contamination)	Questionnaire	104	5,433	68	0	0	5,605
		Trade statistics	26	0	68	0	0	94
	Europe (Countries with low contamination)	Questionnaire	21	558	0	0	0	579
		Trade statistics	0	112	87	0	0	199
	USA	Questionnaire	/	2,031	843	856	0	3,730
		Trade statistics	/	3,933	2,818	1,306	104	8,161
	Canada	Questionnaire	459	295	1,308	219	0	2,281
		Trade statistics	1,135	1,425	455	87	0	3,102
	Others (Hungary, Mexico and Chile)	Questionnaire	0	70	187	0	0	257
Trade statistics		0	0	0	0	0	0	
Total	Questionnaire	768	8,387	2,406	1,075	0	12,636	
	Trade statistics	1,161	5,470	3,428	1,393	104	11,556	

		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	8	3.50	0	0.00	0	0.00	0	0.00	0	0.00	8
	Europe (Countries with moderate contamination)	31	0.31	1,510	15.10	17	0.17	0	0.00	0	0.00	1,558
	Europe (Countries with low contamination)	3	0.00	92	0.92	0	0.00	0	0.00	0	0.00	95
	USA	/	/	1,480	0.03	552	0.01	476	0.01	0	0.00	2,508
	Canada	384	0.04	94	0.009	679	0.07	128	0.01	0	0.00	1,285
	Others (Hungary, Mexico and Chile)	0	0.00	4	0.00	154	0.00	0	0.00	0	0.00	158
	Total	426	3.85	3,180	16.06	1,402	0.25	604	0.02	0	0.00	5,612
		Negligible		Low		Negligible		Negligible		Negligible		/

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

Trade statistics ²	Total	1,161	0.37	5,470	1.34	3,428	1.65	1,393	0.03	104	0.00	11,556
				Negligible		Negligible		Negligible		Negligible		Negligible

- 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 584 tons of live cattle from countries with moderate contamination (France, Switzerland, and Germany) is reported in the trade statistics. (When the volume of imported live cattle is indicated only in the weight and not in the number of animals, that volume is not included in the assessment.)

Table 48. Import of MBM from BSE Risk Countries experienced by Brazil

		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	0	0	0
		Trade statistics	0	0	0	0	0	0
	Europe (Countries with moderate contamination)	Questionnaire	0	0.2	0	0	0	0.2
		Trade statistics	0	0	0	0	0	0
	Europe (Countries with low contamination)	Questionnaire	0	0	0	0	0	0
		Trade statistics	0	0	0	0	0	0
	USA	Questionnaire	/	173	0	0	0	173
		Trade statistics	/	0	180	119	0	299 29
	Canada	Questionnaire	0	0	0	0	0	0
		Trade statistics	0	0	0	0	0	0
	Others ()	Questionnaire	0	0	0	0	0	0
		Trade statistics	0	0	0	0	0	0
Total	Questionnaire	0	173	0	0	0	173	
	Trade statistics	0	0	180	119	0	299	

		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	UK	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
	Europe (Countries with moderate contamination)	0	0.00	0.2	0.02	0	0.00	0	0.00	0	0.00	0.2
	Europe (Countries with low contamination)	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
	USA	/	/	173	0.003	0	0.00	0	0.00	0	0.00	173
	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	0	0.00	173	0.02	0	0.00	0	0.00	0	0.00	173
		Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	/

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

Trade statistics ²	Total	0	0.00	0	0.00	180	0.004	119	0.002	0	0.00	299
		Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	/

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 Brazilian government. The level of invasion risk for live cattle between 1986 and 1990 was 3.85 in UK equivalent and regarded 'negligible'. The invasion risk level between 1991 and 1995 was 16.06 and regarded 'low'; between 1996 and 2000 was 0.25 and regarded 'negligible'; between 2001 and 2005 was 0.02 and regarded 'negligible'; and between 2006 and 2007 was 0 and regarded 'negligible'. (The UK equivalents obtained in evaluation of invasion risk levels using trade statistics were 1.65 or lower for all periods between 1986 and 2007. The level of invasion risk for this period, therefore, was regarded 'negligible'.)

The UK equivalents for MBM were 0 for the period between 1986 and 1990, 0.02 between 1991 and 1995, and 0 between 1996 and 2007. The invasion risk, therefore, was regarded 'negligible'. (The UK equivalents obtained in evaluation of invasion risk levels using trade statistics were 0.004 or lower for all periods between 1986 and 2007. The invasion risk for this period, therefore, was regarded 'negligible'.)

The overall invasion risk (combination of risks by imported live cattle and MBM) was regarded 'negligible' for the period between 1986 and 1990, 'low' for the period between 1991 and 1995, and 'negligible' for the period between 1996 and 2007 (Table 49). (Evaluation of invasion risk level based on trade statistics resulted in 'negligible' for all the periods. Even when the values in the questionnaire response did not match the values in the trade statistics, the level of overall invasion risk never exceeded the values in the questionnaire response.)

Table 49. External Challenge experienced by Brazil

	1986-1990	1991-1995	1996-2000	2001-2005	2006-2007
Live cattle	Negligible	Low	Negligible	Negligible	Negligible
MBM	Negligible	Negligible	Negligible	Negligible	Negligible
Overall Level	Negligible	Low	Negligible	Negligible	Negligible

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

Feed regulations

In 1996, the Brazilian government implemented a ban on the feeding of ruminant-derived protein and MBM to ruminants. In 2001, ban on feeding of mammal-derived protein to ruminants was implemented followed by the implementation of ban on feeding all animal-derived protein to ruminants in 2004.

In more than 90% of the Brazilian farms, both beef cattle and dairy cattle are raised in extensive grazing systems with grass and minerals as the only feeds. In the farms with intensive systems, concentrated feed is fed in addition to coarse feed, and in some cases, milk substitute is fed to calves. In Brazil, where vegetable protein is abundantly available with low costs, MBM is not generally used for cattle feeds.

In Brazil, all swine and poultry farms must register their operation, and their location, as well as transportation and handling of animals are specifically regulated. Therefore, it is considered that mixed rearing of swine/poultry and cattle is not practiced. Since 2005, veterinary officers have carried out feeding management at farms, including the same microscopic inspection that is conducted at feed manufacturing facilities. In the 354 inspections carried out in 2005, 525 inspections in 2006, and 430 inspections in 2007, 58, 44, and 106 cases, respectively, of positive cases were obtained. These samplings were not carried out at random, but they were conducted by choosing suspected facilities and those with a record of cross contamination in the past.

To ensure the compliance with regulations on feed manufacturing and distribution, the Department of Livestock Input (DFIP) within the Inspection the Secretariat of Animal and Plant Health and Inspection (SDA) sets a target of annual inspection, and inspectors in Agribusiness Inspection Service in each state conduct assessment. In 2006, a total of 1,817 case of inspection were carried out, where 514 cases of violation were recorded through inspection of data records and products in stock. When a violation is found, a notification of violation is published, and shipment of the products in the sampled lot is stopped and the products already shipped to the market from the same lot are recalled. The facility is instructed to discontinue the production of ruminant feeds until appropriate measures are taken.

Sampling tests are conducted to examine contamination of animal protein in cattle feeds with microscopic examination. In 2007, 143 cases out of 1,073 cases inspected were reported positive. When a violation is detected, the facility is instructed to recollect the products from the relevant lots, discontinue the production of ruminant feeds, and report the manufacturing processes.

Use of SRM

Brazil has defined SRM for cattle as head, eyes, distal ileum, and tonsils in the 2007 regulations. Until the definition of SRM was settled, head (including brain, skull, eyes, trigeminal ganglia, and tonsils, and excluding tongue and cheek meat), vertebral column (including dorsal-root ganglion), spinal cord, distal ileum, and bovines condemned at antemortem had been processed into MBM and used as animal feed material. After SRM was defined as above, head and distal ileum are incinerated. Use of brain and spinal cord for human consumption has been allowed in Brazil.

Fallen stock are either incinerated or buried at the farm in Brazil. This is due to the geographical conditions of the large land of Brazil, where transporting dead or infected animals to a rendering facility is not economically feasible. Processing of dead animals has been legally prohibited in Brazil since 2003.

Rendering Conditions

In Brazil, the rendering condition of 133/20/3 (at 133°C for a minimum of 20 minutes at absolute pressure of 3 bar) has been legally obligated since 2003. The compliance with the rendering regulations is monitored by SIF officers every six months.

Measures to Prevent Cross-contamination

According to the 2006 data, 3,189 feed mill facilities are registered in Brazil. Among these facilities, 1,103 are producing feeds for ruminant animals, while 771 facilities are registered as ‘mixed facilities’ (they produced feed for both ruminant and non-ruminant animals). In 2008, a set of regulations to prohibit production of ruminant and non-ruminant animals in a same facility was published. However, facilities are exempted from these regulations if they meet the certain requirements (e.g., lines are separated, Good Manufacturing Practice (GMP) is followed, appropriate measures to prevent cross contamination are taken, and monitoring programs based on results of laboratory analyses of ruminant feeds are carried out).

The number of rendering facilities reported in the 2006 data is 409. Although there are no data to describe the ratio of dedicated facilities (facilities that are involved in rendering of particular species only) and mixed facilities (facilities that are involved in rendering of both ruminant and non-ruminant animals), each rendering facility is located adjacent to a slaughterhouse and treats only the residues obtained from that slaughterhouse. Based on this fact, in addition to the practice of regular veterinary inspection, there seems very low possibilities for contamination of materials from other facilities.

Others

Transmissible spongiform encephalopathy (TSE) cases other than BSE have been detected in Brazil. A total of 18 cases of scrapie have been found since 1996, and all scrapie-positive sheep have been disposed of. These scrapie cases are the only TSE cases found in Brazil.

Assessment of Domestic Stability

The domestic stability was assessed based on the questionnaire response by the Brazilian government. The assessment was carried out with the level of laws and regulations as the main focus while taking into consideration the low compliance rates of feed regulations and the large number of positive results in feed sample analysis. Our assessment revealed that the risk of exposure/propagation was “high” (1986–1996), “moderate” (1997–2001), “moderate to low” (2002–2003), and “low to very low” (2004–2007) in Brazil (Table 50, Table 51).

Table 50. Domestic Stability in Brazil

Item	Status
Feeding	1996: Ban on feeding of ruminant-derived protein and MBM to ruminants 2001: Ban on feeding of mammal-derived protein and oil/fat to ruminants 2004: Ban on feeding of all animal-derived protein and oil/fat to ruminants
Use of SRM	2003: Ban on processing of dead animals 2007: SRM defined. [SRM] - Head and distal ileum. Before defined: Processed into MBM and used as animal feed materials. After defined: Incinerated. - Vertebral column and spinal cord Before and after defined: Processed into MBM. [Fallen stock] Incinerated or buried at the farm (Processing of dead animals is legally banned after 2003). [bovines condemned at antemortem] Incinerated or buried at the farm.
Rendering conditions	133°C/20min/3bar is legally obliged in 2003.
Measures to prevent cross-contamination	[Feed mills] 2008: Production of ruminant and non-ruminant animals in a same facility is banned (excluding facilities that meet certain requirements). [Rendering facilities] Possibility of contamination of materials from other facilities is considered very unlikely (each rendering facility is located adjacent to a slaughterhouse and treats only the residues obtained from that slaughterhouse. Veterinary inspections are carried out regularly).

Table 51. Assessment of Domestic Stability in Brazil

	Feeding	Use of SRM, Rendering Conditions, Preventive measure against cross-contamination, etc.	Risk of exposure/ propagation
1986–1996	No specific regulations		High
1997–2001	Ban on feeding of ruminant-derived protein and MBM to ruminants		Moderate
2002–2003			Moderate to low
2004	Ban on feeding of mammal-derived protein and oil/fat to ruminants	2003: Rendering conditions of 133°C//20min/3bar is legally obliged. Processing of dead animal was legally banned.	Low to very low
2005–2007	Ban on feeding of all animal-derived protein and oil/fat to ruminants	2008: Production of ruminant feeds and non-ruminant feeds in a same facility was banned unless the facility meets certain requirements.	

c. Verification by surveillance, etc.

Population Structure

The total cattle population in Brazil in 2006 was 204,510,000, out of which 97,550,000 are aged under 24 months. The cattle aged over 24 months are made up of 69,740,000 beef cattle, 19,120,000 of dairy cattle, and 18,100,000 of cattle raised for a breeding purpose.

Surveillance Outline

In Brazil, BSE surveillance started in 1997, when a rabies surveillance system was implemented. BSE was made a notifiable disease. Active surveillance has been carried out since 2002.

In the surveillance, all cattle aged over 24 months with neural disorder are treated as suspected cases of BSE unless other cause is proved. In addition, following cases are treated as suspected cases of BSE and subject to sampling: (1) cattle with chronic conditions without a clear cause, (2) cattle showing progressive neural disorder for more than 15 days, (3) cattle with progressive debilitating disease, (4) all cattle subject to emergency slaughter, and (5) fallen stock. BSE tests are also conducted on mature cattle that have become subject to rabies tests and shown negative results, as well as animals imported from a country with BSE cases. Among the cattle aged over 30 months that are subject to routine slaughter, dairy cattle, as well as beef cattle raised in intensive/semi-intensive systems, become subject to surveillance.

The methods of sampling for BSE are described in the Manual for Diagnostic Procedures of Bovine Central Nervous System Disorders. Samples are tested in histopathological methods and immunohistological methods.

The surveillance was conducted for 1,138 animals between 1999 and 2001. Since active surveillance was started in 2002, a total of 15,507 animals have been surveyed. No animal has been diagnosed as BSE positive. The surveillance outcome over the latest 6 year period (2002-2007) was statistically analyzed based on the point system used by OIE, and was assumed 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 52).

Table 52. Surveillance Point Calculation in Brazil

Number of cattle raised (2006): 106,960,000* → 300,000 points are needed in seven years.

Year	Number of Animals Surveyed				Total
	Routine slaughter	Fallen stock	Casualty slaughter	Clinical suspect	
2002	4,801	45	122	671	5,639
2003	575	56	23	888	1,542
2004	290	107	692	1,362	2,451
2005	166	82	1,053	1,057	2,358
2006	301	72	1,514	680	2,567
2007	67	17	718	148	950
Total	6,200	379	4,122	4,806	15,507
Surveillance points	(× 0.2) 1,240	(× 0.9) 341	(× 1.6) 6,595	(× 750) 3,604,500	3,612,676 (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 in the questionnaire response by the Brazilian government was used for calculation.
- Cattle imported from BSE risk countries are subject to tests in Brazil. Calculation was made under an assumption that all of these cattle were for routine slaughter.

BSE Awareness Program and Mandatory Notification

Since 1934, all diseases of foreign origin and emerging diseases are subject to mandatory reporting. Since 1997, when BSE was designated as a notifiable disease, the Brazilian government has been promoting measures and technical instructions for BSE prevention and surveillance. Since 2002, training sessions on the BSE surveillance system has been provided for researchers and instructors at educational and veterinary research institutions nationwide. The researchers and instructors, in turn, deliver the knowledge received in the training to veterinarians nationwide who provide services to cattle farmers. Manuals and other types of literatures with different levels of information are published as well as distributed to different types of readers, such as farmers and general public.

In order to deal with BSE as a foreign originated disease, the Brazilian government has stipulated regulations to oblige disposal of the affected animals and to provide compensations to the owners. According to the regulation of 2001, when an animal was imported from a country considered by MAPA as a BSE risk country, and ended the production or bleeding purpose, a part of the brain is submitted for BSE tests and the rest of the body is either incinerated or buried. The owners of such animals receive compensation.

(2) Beef and Beef Offal

a. SRM Removal

Methods of SRM Removal, etc.

According to the questionnaire response by the Brazilian government, meat are exported to Japan after removing head (including brain, skull, eyes, trigeminal ganglia, and tonsils, excluding tongue and cheek meat), vertebral column (including dorsal-root ganglia), spinal cord, and distal ileum. The removed SRM is either incinerated or chemically treated and buried.

Splitting is a common practice in slaughter houses. Teeth of saws used for splitting are being washed while in use, and the saws are washed and sterilized between the use for each carcass (before the use for the next carcass). Spinal codes are removed with a special machine or a suction machine. The carcasses are washed with high-pressure water after removing the spinal code. Inspectors check for spinal cord residues on the carcasses.

Tonsils are removed at slaughterhouses by the meat inspectors at the time of head inspection. Distal ileum is removed by the trained workers at the slaughterhouse. Removal of distal ileum is checked by veterinary officers when verifying the monitoring and implementation of management program of SRM at slaughterhouses.

Control based on (SSOP) and (HACCP)

Sanitary Standard Operation Procedure (SSOP) and Hazard Analysis Critical Control Point (HACCP) are adopted in all of the seven slaughterhouses and fabrication plants that process meat intended for export to Japan. The facilities are to set up procedures regarding removal, sorting, and destination for processing of SRM in its voluntary management program.

Additional Requirements, etc. for Export to Japan

Facilities that produce meat and meat products intended for export to Japan are required to implement HACCP and SSOP and to remove SRM.

Furthermore, the livestock hygienic conditions require removal of digestive tract, uterus, bladder, head (excluding tongue and cheek meat), spinal cord, and vertebral column (structural components, such as bone and dorsal root ganglia), as well as removal all bones when processed with heat.

b. Slaughtering Processes

Antemortem inspection and BSE testing at the slaughter houses

Antemortem inspection is conducted by an official veterinarian to examine for diseases and abnormal behaviors. Animals that show any kinds of abnormality are separated and tested before being slaughtered. All the separated cattle are subject to brain stem sampling. BSE tests are carried out only with a part of routine slaughter cattle for a purpose of surveillance.

Stunning and Pithing

In Brazil use of the penetration method (a method to directly damage brain with a captive bolt stunner) and non-penetration method (a method to make the animal unconscious by causing concussion with a strong hit on the head) of stunning are allowed. The slaughter method of injecting pressured air or gas into the skull is not used in any slaughterhouses in Brazil.

Pithing, which has been banned in Brazil since 2000, is not practiced.

c. Others

Mechanically Recovered Meat (MRM)

Mechanically recovered meat (MRM) is produced in six facilities in Brazil. Only bones, carcasses, and part of carcasses that are treated for human consumption by authorized meat shops are used as materials for MRM. Head, leg and hooves cannot be used for MRM.

Brazil exports only heated/frozen cut meat to Japan. MRM is not exported from Brazil to Japan.

Traceability

Brazil implemented SISBOV, a birthplace identification system for cattle and buffalo in 2002. Items that are registered in the identification system include the name and location of the farm; SISBOV identification number; and species, breed, sex, and birth date of the animal. Since August 2003, cattle and buffaloes imported for the purpose of breeding, rearing, and fattening are obliged to meet SISBOV criteria.

The identification system can specify the age in months for about 5.1% of the all cattle reared in Brazil.

Number of Slaughterhouses and Number of Slaughtered Animals

There are 315 slaughterhouses in Brazil. According to the data in 2007, approximately 18,990,000 bovines are slaughtered annually. Meat intended for export to Japan is produced in a total of seven slaughterhouses and fabrication plants.

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

Based on the questionnaire response by the Brazilian government, the risk-reducing measures at meat processing lines in Brazil were assessed. The risk-reducing efficacies of the measures were recognized 'extremely effective' (Table 53).

Table 53. Summary of Assessment for Brazil

		Measure	Judge
Current Practice of SRM Removal	Definition of SRM	2007: The following items are specified. - Brain - Eyes - Distal ileum (70 cm) - Tonsils	SRM is removed based on the regulations of the specific country (Methods of practice, etc.: Very good)
	Removal of SRM	[Meat intended for export to Japan] - Head, vertebral column, spinal cord, distal ileum...: removed regardless of the age.	
	Methods, etc.	Splitting saws are washed between different animals.	
		Carcasses are washed with high-pressure water. Inspectors check for spinal cord residues on carcasses. HACCP and SSOP are implemented in facilities for export.	
Inspection at slaughter houses Stunning and pithing	Inspection at slaughterhouse	- Animals that show any kinds of abnormality at the antemortem inspection are separated and their brains are sampled. - BSE tests are carried out only with a part of routine slaughter cattle for a purpose of surveillance.	Good
	Stunning with injection of pressured air or gas into the skull	Not practiced.	
	Pithing	Not practiced.	
MRM		MRM are produced but not exported to Japan.	
Additional requirements, etc. for export to Japan		- SSOP and HACCP must be implemented. - SRM is removed.	
Livestock Hygiene Requirements		[SRM] Digestive tract, head (excluding tongue and cheek meat), spinal cord, and vertebral column (structural components, such as bone and dorsal root ganglion) must be removed. All bones must be removed if processed with heat.	
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: 'extremely effective'	

(3) Conclusion

The evaluation of beef and beef-offal imported from Brazil to Japan, based on the Brazil's responses, resulted in our consideration that the external challenge is "negligible" (1986–1990), "low" (1991–1995) and "negligible" (1996–2007). In addition, the risk against domestic (internal) stability was considered that risk of exposure/propagation was "high" (1986–1996), "moderate" (1997–2001), "moderate to low" (2002–2003), and "low to very low" (2004–2007). For the periods of 1997–2001, 2002–2003, and 2004–2007, domestic risk based on external challenge (invasion risk) and risk against domestic stability (domestic stability risk) were taken into consideration in addition to the invasion risk.

Based on the results of assessments for external challenge and risk against domestic stability, the possibility that BSE exposure/propagation have occurred in the past in Brazil is considered to be low. Since then, the domestic stability has been improved. Accordingly, the current risk of BSE exposure/propagation in Brazil is considered to be very low.

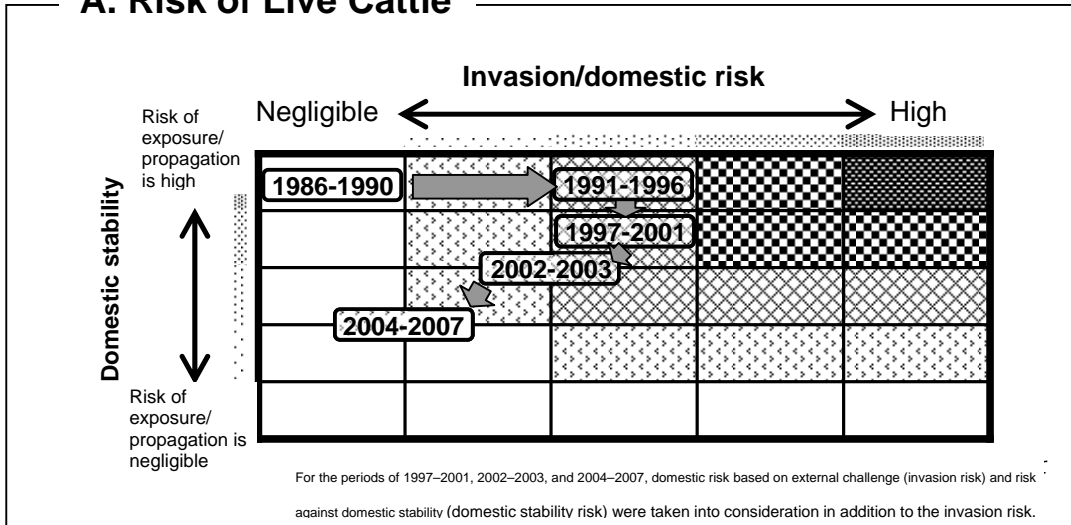
The surveillance so far has turned out to be with no BSE positive cattle, thus the surveillance outcome over the 6 year period (2002–2007) was assumed sufficient enough to meet the standard which "will allow the detection of BSE less than 1 case in 100,000 adult cattle population at a 95% confidence level", based on the point system (BSurvE system) employed by the OIE.

Risk-reducing effect during the meat processing steps was assessed as "extremely effective."

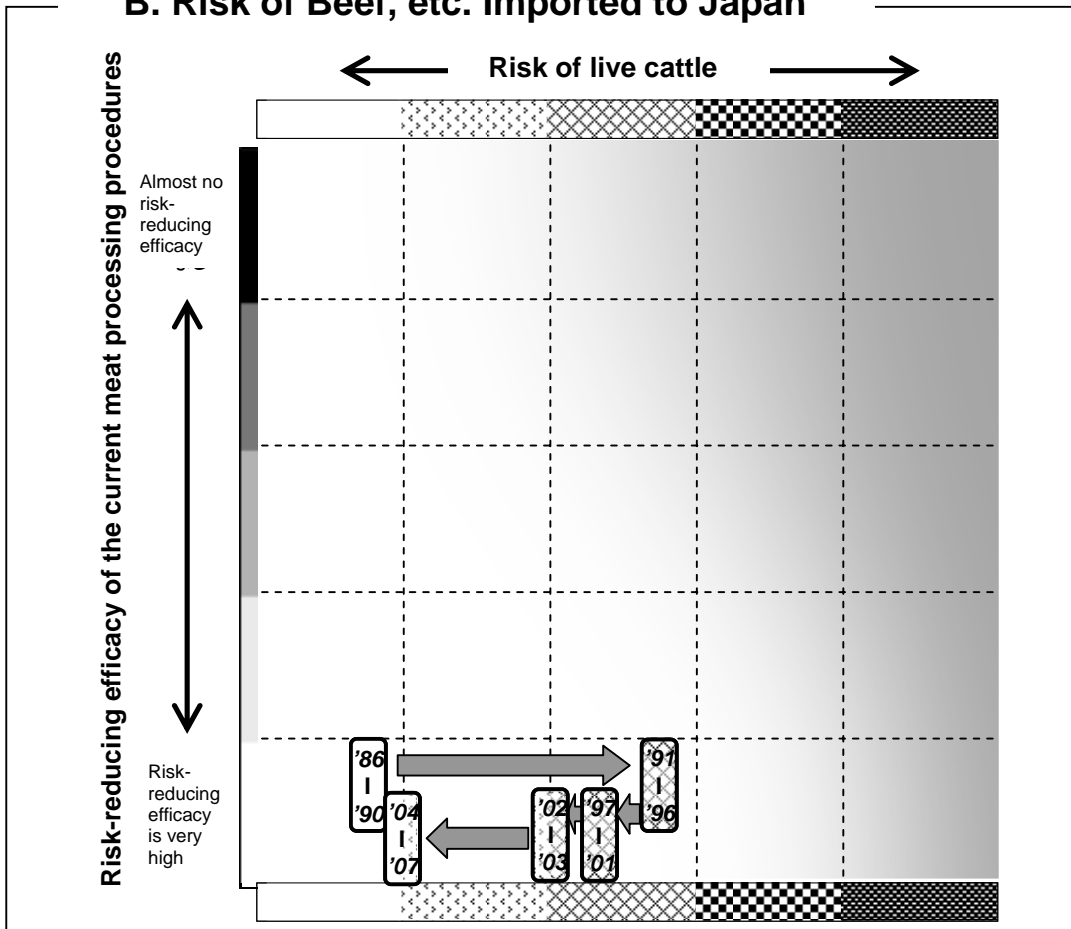
Judging from those presented above, the potential risk of BSE exposure/propagation in Brazil is considered very low, and the risk-reducing effect during the meat processing steps was assessed as "extremely effective." Therefore, the risk of BSE prion contamination in beef and beef-offal imported from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

<Reference: Brazil>

A. Risk of Live Cattle



B. Risk of Beef, etc. Imported to Japan



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