

Bovine spongiform encephalopathy in South America: a regional preventive approach

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Summary

Bovine spongiform encephalopathy (BSE) is a neurodegenerative disease of cattle caused by prions that was first described in the United Kingdom (UK) in 1986. The BSE epizootic that commenced in the UK in the 1980s has since spread into other countries in Europe and Asia through exports of contaminated meat-and-bone meal or infected cattle. Over the past few years, other emerging or re-emerging diseases have spread into previously free countries or regions through international trade. This negative effect of globalisation means that to implement successful preventive and strategic programmes to safeguard animal health, such programmes must, as a priority, take a regional approach. Global thinking, regional planning and local performance constitute the key factors for the successful control of animal diseases.

In South America, initial preventive actions against BSE were adopted in 1989. Further measures adopted since then and based on new scientific and technical findings, have led to the demonstration that the region is free of BSE. These early preventive actions have reliably protected the region from importing BSE-infected material. An integral part of the project to determine the BSE status of South America was the training of personnel, the incorporation of technology and the provision of updated information through close relationships with international organisations and prominent international researcher workers. Regional activities aimed at harmonising BSE prevention programmes, producing objective and transparent data on the equivalence of regional BSE status and facilitating regional and international trade have recently been launched. Maintaining the BSE-free status of the region must be given high priority by the beef agro-industrial sectors.

Keywords

Bovine spongiform encephalopathy – Geographical bovine spongiform encephalopathy risk analysis – Risk assessment – South America.

How much is known about bovine spongiform encephalopathy

Bovine spongiform encephalopathy (BSE), also known as 'mad cow disease', is a neurodegenerative disease of cattle caused by prions (12), first described in the United Kingdom (UK) in 1986 (17). Bovine spongiform encephalopathy has been shown to belong to the group of disorders known as the transmissible

spongiform encephalopathies (TSEs). Transmissible spongiform encephalopathies affect both animal species and humans, and include, among others, scrapie of sheep and goats, chronic wasting disease of deer, transmissible mink encephalopathy, feline spongiform encephalopathy (FSE), and Creutzfeldt-Jakob disease (CJD), fatal familial insomnia and Kuru of humans.

At present, feeding cattle with contaminated meat-and-bone meal (MBM) constitutes the main route of infection (18). Vertical or other means of transmission, should they occur, would be at an extremely low incidence.

The epizootic that commenced in the UK in the 1980s has since spread to other countries in Europe and Asia through exports of contaminated MBM or infected cattle. The occurrence of BSE in Canada, the Falkland Islands and Oman originated with the import of infected cattle from the UK. The World Health Organization (WHO) acknowledges that the epizootic could affect any region of the world that has imported contaminated MBM (13).

In 1996, an announcement was made in the UK stating that a potential relationship exists between BSE and the occurrence of a new variant of CJD (vCJD). This had a major impact on consumer behaviour, seriously affecting international beef markets. The agent causing vCJD (18) seems to be different from the agent of typical CJD, but is biologically indistinguishable from the BSE agent (4, 6). Since 1996, over 115 fatal human cases of vCJD have been registered (1, 2) and moderate estimates show that the tendency will continue to grow. In addition to domestic cats with FSE (11), the BSE agent has also been isolated from four feline species held in captivity and from eight different ruminant species (3).

Emerging diseases and the effects of 'globalisation' on animal health

Over the past few years, the effect of globalisation on animal health has been illustrated by the occurrence of other emerging or re-emerging diseases in addition to BSE. The recent re-introduction of foot and mouth disease (FMD) into South America, Europe, Africa and Asia, the occurrence of the Hendra and Nipah viruses in Australia and Malaysia, and of West Nile fever in North America all serve as examples, demonstrating the high risk to which different regions world-wide are exposed.

The reason for such rapid spread of these emerging or exotic diseases among animals and humans has been queried. Clearly, no single explanation exists for this phenomenon, although one main factor favours rapid spread, i.e. the substantial increase in the movement of goods, people and animals around the world. The current intensification in frequency and means of transport facilitates transmission of disease agents much more rapidly than in the past decade. For example, in the southern region of the continent of South America, within a two-year period, cattle may be born in one place, travel over 1,000 km to a fattening area, then travel another 1,000 km to feed-lot facilities for finishing and finally be moved to an auction or market before slaughter. When this is the practice in border regions, animal movements from one country to another become an ordinary event that stimulates trade, taking advantage of better economic and productive conditions in neighbouring countries; borders cease to exist and the area becomes an economic or productive region. Therefore, successful preventive and strategic

programmes to safeguard animal health must, as a priority, have a regional approach. The successful implementation of the FMD control and eradication programme in South America is a clear example of a regional approach for the control of animal diseases.

Global thinking, regional planning and local performance constitute the key factors for the successful control of animal diseases.

Control measures

Animal disease control measures are based on risk analysis. The Office International des Epizooties (OIE: World organisation for animal health), the Codex Alimentarius and other organisations have defined risk analysis and three constituent parts, namely: risk assessment, risk management and risk communication. The latter constitute the matrix on which all other actions (such as active and passive surveillance, contingency plans, etc.) comprising a preventive, control or eradication programme must be built.

In the case of BSE, risk analysis has proven to be an essential tool. This is the reason why the OIE *International Animal Health Code* clearly states that for a country to establish a status with regard to BSE, a detailed risk analysis must be conducted and a series of sanitary requirements must be met (9). On the basis of guidelines set down by the OIE, the European Union (EU) has established the parameters for conducting geographical BSE risk (GBR) analysis (7, 8). Geographical BSE risk analysis operates as a qualitative indicator of the likelihood that one or more cattle showing clinical or preclinical signs of infection be detected within the geographical boundaries of a country. The system establishes four country categories, according to the estimated risk level.

Bovine spongiform encephalopathy risk analysis is based on three components, as follows:

a) Risk assessment

Given the absence, to date, of BSE in South America, the following points must be covered by any BSE control programme:

- the dates on which restrictions were implemented regarding imports of animals and MBM from countries having reported the presence of BSE or high-risk countries or zones
- the scope of the restrictions
- the extent of the ban on feeding MBM to ruminants
- the absence of other TSEs.

Estimations on spread, exposure and consequences must be made on the basis of higher or lower potential risk parameters, considering such risk sources in the light of occurrence

likelihood within foreseeable eventual incubation terms. Table I indicates the rapidity with which each country introduced control measures aimed at reducing risk factors and increasing resources. The table is a useful tool for estimating the potential risk level of each country.

b) Risk management

Precautions taken for the import of animals, biological material and food are key elements in maintaining the disease-free status of countries in South America. Immediate risk-reduction systems, early detection and immediate disposal and follow-up systems, ready to be applied in the event of an emergency, must be established by countries in the region. This would make the animal health control systems of countries in South America more reliable. Therefore, assessment of the Veterinary Services and follow-up systems constitute the basis for estimating the reliability of risk management.

c) Risk communication

As BSE is regarded by the OIE as a serious and notifiable disease, it is a key factor in the world trade of beef. Inclusion on an OIE list of BSE-free or low-risk countries is an essential goal to be achieved. Two requirements of paramount importance must be met in global trade, namely: having an acknowledged system capable of immediate notification and acting in consequence. The integration of a regional network to facilitate communication of actions adopted by the different participating countries was the key issue discussed during the First Workshop on TSE diagnosis, organised by the OIE Regional Representation for the Americas in May 2002 (10).

The occurrence of BSE in the UK and the characteristics of the BSE agent, i.e. long incubation period, resistance to inactivation, lack of diagnostic techniques in live animals, route

of transmission and destruction of affected animals, have reintroduced the concept of applying food quality assurance systems throughout the production chain as a risk analysis tool for public health protection, in particular when infectious or emerging diseases are involved.

Livestock production in South America

Cattle and sheep were introduced into South America in the 16th Century by the Spanish conquerors. The geographical situation, especially the temperate zones with predominant large natural grass plains, lack of predators and a suitable climate, allowed cattle and sheep to thrive. Livestock-rearing systems that have been developed since – extensive-farming systems with natural grass feeding throughout the year – have had a positive impact on the genetic and productive improvement of cattle breeds, first introduced from Europe and then from North America. These breeds have adapted perfectly to the plains and today represent 19% of the cattle population of the world (Figs 1 and 2). Similar developments also took place in the industrial sector, which led to the countries in the region becoming net exporters of beef and beef-derived products and by-products (Fig. 3).

Sources of information

Throughout the world, BSE controls have been rigorous and the same rigour must be applied in every country where the disease occurs. There is also great concern about the possibility that countries affected by BSE have exported potentially BSE-contaminated products to other countries in the world.

Table I
Bovine spongiform encephalopathy control measures applied in South America, by country, 1988-2001

Country (cattle population)	Animals and genetic material import ban	Ruminant material feed ban	Meat-and-bone meal import ban	Epidemiological and laboratory surveillance	Occurrence of other TSEs	
Argentina (50,673,273)	1989	1995	1990	1992	None	
Brazil (123,516,136)	1991	1996	1996	1992	Scrapie (2001)	
Chile (4,165,678)	1990-1996	2000	2000	1990	None	
Colombia (28,326,608)	1998-2001	2002	2001	1998	Scrapie (1981)	
Paraguay (9,750,771)	1996	1996	1996	1997	None	
Uruguay (10,799,905)	1988	1996	1996	1994	None	
Peru	} Information is incomplete. There are no apparently important routes of animal and meat-and-bone meal imports from countries in Europe. Epidemiological surveillance is based on the rabies surveillance programme in the region					
Bolivia						
Ecuador						
Guyana						
Venezuela						

TSEs: transmissible spongiform encephalopathies
Source: Food and Agriculture Organization Statistics, 2001



Fig. 1
Bovine population in South America (country percentages)
Source: Food and Agriculture Organization Statistics, 2001

Since the beginning of the BSE epizootic, severe trade restrictions have been imposed, based on the presence of endemic BSE or the lack of proper guarantees of freedom from the disease. Restrictions on international trade due to BSE have been the single most discussed issue in the history of the Committee on Sanitary and Phytosanitary Measures (SPS Committee) of the World Trade Organization (WTO).

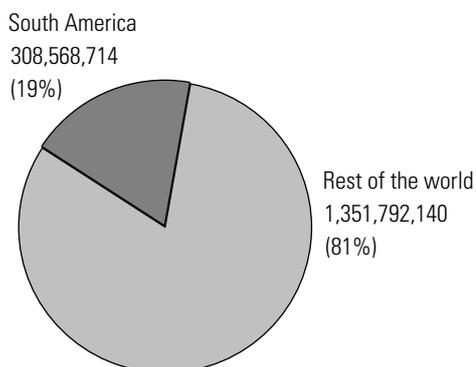


Fig. 2
Percentages and number of cattle in South America compared to world totals
Source: Food and Agriculture Organization Statistics, 2001

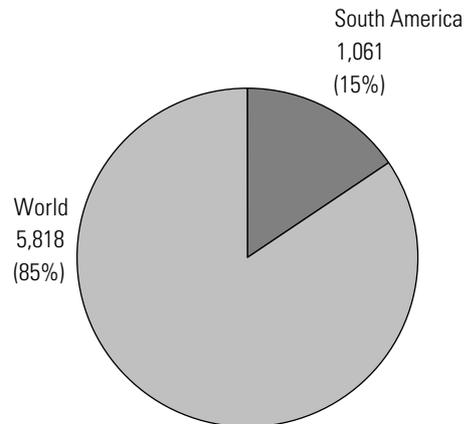


Fig. 3
Beef exports from South America in comparison to the rest of the world (million tonnes)
Source: United States Department of Agriculture, 2001

The objective of this paper is to present the BSE risk status of countries in South America and the management measures implemented to reduce the identified risks. All the country-related information provided in the paper was obtained from the First Regional Training Workshop on TSE diagnosis (10) and the website of the European Commission (7, 8). Risk assessment is the component of risk analysis that estimates the risk associated with an identified hazard and is therefore the best tool for managing a situation in which lack of scientific knowledge poses one of the greatest difficulties in risk communication. Risk management is the logical approach for a full preventive policy.

Regional situation

Argentina

Measures to prevent BSE commenced at the end of 1989, resulting in a ban on the import of cattle, cattle-derived products and by-products from the UK. The ban was then applied to other countries with occurrences of BSE.

From 1980 to 1990, only 239 bovines were imported into Argentina, as follows:

- 19 from the UK
- 17 from Switzerland
- 3 from the Netherlands
- 81 from Italy
- 20 from Austria
- 43 from Germany
- 59 from Spain.

A follow-up and surveillance system for imported breeders was implemented in 1995, allowing identification and traceability of the destination of these breeders. Argentina is a net exporter of MBM and thus no MBM has been imported during the past twenty years from countries with occurrences of BSE or high-risk countries. A ban on feeding ruminants with ruminant-derived MBM has been in place since 1995 and was extended in 1996 to all ruminant proteins (milk excluded). In 1998, controls were enforced to detect any fraud, adulteration or cross-contamination in cattle feedstuffs and in 2002, a surveillance programme was implemented. Given the characteristics of the extensive cattle-rearing system in Argentina (with low production costs and margins), little or no grain-based feed supplements are used.

Bovine spongiform encephalopathy surveillance commenced in 1992 so that an active surveillance programme could be in place by 1994 to comply with OIE requirements. Professionals trained in the UK, Switzerland, the United States of America (USA) and a national reference laboratory for TSEs supervised the implementation of the programme. Between 1990 and 2002, over 13,000 samples were tested for BSE using histopathological, immunohistochemical and molecular techniques; all gave negative results.

Since 1990, BSE notification is mandatory. In 1992, a training programme for professionals, farmers and sectors linked to the food industry was implemented. An awareness-raising programme for the general public was initiated in 1994 and is still in place. In 1996, a decree was issued, providing for the creation of an International Advisory Scientific Committee. The Committee has met three times since being created and has produced two reference documents containing specific recommendations.

The first BSE risk factors analysis was conducted in 1991 to monitor preventive measures with the aim of reducing risk (5). The analysis was updated in 1994, 1996 and 1998 (14, 15, 16). In all cases, the risk of BSE occurrence in Argentina was demonstrated to be negligible. Argentina fulfils all the requirements of Chapter 2.3.13. of the OIE *International Animal Health Code* to be regarded as a BSE-free country.

The GBR for Argentina submitted by the EU in 1999, established that the risk of disease occurrence in Argentina is negligible and the country has been classified as a Level I country. Since April 2001, the programme for TSE prevention in Argentina was strengthened, as follows:

- a) implementation of an animal identification system, particularly in farms exporting to the EU
- b) systematic surveillance of the animal feed chain
- c) reinforcement of the communication and training programme for professionals, farmers and transport workers and targeted surveillance according to international recommendations
- d) improvement of surveillance on rendering plants.

Brazil

In 1991, Brazil implemented BSE preventive measures by establishing a ban on the import of cattle from the UK. To date, however, about 6,215 bovines have been imported from countries with occurrences of BSE. The destination of about 115 of these animals is unknown. In 2000, a follow-up programme for imported breeders was implemented to ensure that any potential risk of BSE being introduced was monitored. Only 346 kg of MBM were imported from the UK and France in the 1990s.

A ban on feeding ruminants with ruminant-derived MBM has been in place in Brazil since 1996. As from 2001, the ban was extended to include a restriction on feeding mammalian MBM to ruminants. Due to the characteristics of the extensive cattle-rearing system, with low yields in the largest livestock-raising areas of the country (north, north-west and south), feed supplements are rarely used and only given to high-yield cattle (dairy cattle).

A BSE surveillance programme based on the existing rabies surveillance programme was initiated in 1992 (16,888 cases were analysed from 1997 to 2002). An active surveillance programme was in place by 1997, in line with OIE requirements. Activities were conducted by professionals trained in BSE awareness with the support of well-equipped laboratories. To date, over 1,700 samples have been tested, using histopathological and immunohistochemical techniques; all results have been negative. In 2001, a second case of scrapie in sheep was diagnosed in Brazil.

Bovine spongiform encephalopathy notification has been mandatory since 1990. In 1995, a training programme for professionals from the food sector was implemented, and an awareness-raising programme for the general public commenced in 1998. An Advisory Scientific Committee was created in 2002.

The GBR for Brazil submitted by the EU in 2000, established that the risk of disease occurrence in the country is negligible. Brazil has been classified by the EU as a Level I country (depending on the certainty of information received from Brazil with regard to the destination of animals imported from countries with occurrences of BSE or high-risk countries).

Chile

Bovine spongiform encephalopathy prevention measures were initiated in 1990 with the implementation of a ban on the import of cattle from the UK. To date, Chile has imported only 65 bovines from a country with occurrences of BSE (Denmark), which, since 1998, have been kept under strict control. During the same period, Chile imported, again from Denmark, 151 tons of MBM for fish-feeding purposes.

In 1991, Chile undertook a risk analysis programme to prove the unlikelihood of BSE being present in the country. In 1996, mandatory notification of BSE was established (including compensation for notification).

A BSE surveillance programme was also initiated in 1990 and a laboratory was approved to perform histopathological diagnosis of BSE. A surveillance programme carried out in accordance with OIE requirements has been in place since then and is updated on a yearly basis. To date, all results have been negative for over 1,450 brain samples examined by histopathological techniques. Immunohistochemistry was introduced in 2000.

A ban on feeding ruminants with ruminant-derived MBM was implemented in 2000 and a training and awareness programme was developed. An Advisory Scientific Committee was created and, in 2001, rules regarding MBM manufacture (obligation to heat MBM to 133°C for two hours) were established. Due to the characteristics of the extensive cattle-rearing system with low yields, feed supplements are rarely used and only given to high-yield dairy cattle.

The GBR for Chile, submitted by the EU in 2000, established that the risk of disease occurrence in the country is negligible. Chile has been classified by the EU as a Level I country.

Colombia

Measures to prevent BSE were initiated in 1997, resulting in the implementation, as of 2001, of a ban on the import of cattle from countries with occurrences of BSE. To date, Colombia has imported 226 bovines from Denmark, France and Spain. The place of destination of most of these animals is unknown.

Recently, Colombia commenced a BSE risk analysis programme. Bovine spongiform encephalopathy notification has been mandatory since 2001.

In 1981, scrapie was diagnosed in sheep in Colombia. In 1998, the BSE surveillance programme was launched, taking advantage of measures already in place for the bovine rabies surveillance programme. The programme is currently being expanded to comply with OIE guidelines and recommendations and is supported by a number of laboratories that conduct histopathological analysis. To date, all samples (over 100 brains per year from 1998 to 2002) have tested negative for BSE.

Given the extensive cattle-rearing system in Colombia and the availability of pastures all year round, little or no grain feed supplements are used.

A ban on feeding ruminants with mammalian MBM has been in place since 2001. A training and awareness programme commenced in 2002.

The GBR for Colombia, submitted by the EU in 2000, established that, although never detected, the risk of BSE occurrence in Colombia is possible. Colombia has been classified by the EU as a Level II country.

Paraguay

Bovine spongiform encephalopathy prevention measures were first applied in Paraguay in 1996 by the enforcement of a Ministerial Resolution establishing a ban on imports of cattle, cattle-derived products and by-products from the UK and other countries with occurrences of BSE.

No bovines or MBM have been imported from countries with occurrences of BSE or high-risk countries. The extensive tropical livestock-rearing farming systems practised in Paraguay exclude the use of supplements in cattle feeding as this is economically unviable. In 1996, a resolution establishing an additional preventive measure was issued, banning the use of mammalian meals in animal feed.

Bovine spongiform encephalopathy notification also became mandatory in 1996. An active surveillance programme was initiated, based on the existing bovine rabies surveillance programme. The programme has been effective since 1997 and is supported by a laboratory and personnel with training in BSE awareness. To date, no case of BSE has been detected.

Bovine spongiform encephalopathy training and awareness programmes for professionals and field staff have been implemented, along with a public awareness-raising programme.

The GBR for Paraguay, submitted by the EU in 2000, established that the risk of disease occurrence in the country is negligible. Paraguay has been classified by the EU as a Level I country.

Uruguay

Bovine spongiform encephalopathy prevention measures were first applied in Uruguay in 1988 by the enforcement of a resolution banning imports of cattle, cattle-derived products and by-products from the UK and other countries with occurrences of BSE. Only nine bovine breeding animals in Uruguay were imported from the UK, all of which were slaughtered and buried at the farm of destination. No MBM has been imported from countries with occurrences of BSE or high-risk countries.

The extensive-farming systems typical of livestock-rearing in Uruguay exclude the use of supplements in cattle feeding as this is economically unviable. In 1996, a resolution establishing an additional preventive measure was issued, imposing a ban on the use of mammalian meals in animal feed. This measure has been accompanied by strict controls on animal feedstuffs.

Bovine spongiform encephalopathy notification became mandatory in 1994 and a surveillance programme was implemented and strengthened in 1998, with retrospective analysis to 1978. Uruguay has technical personnel trained in Switzerland in BSE diagnosis and a national laboratory with the capacity to conduct BSE diagnosis using histopathological methods. To date, no BSE case has been detected.

In 1994, a training and BSE awareness programme for professionals and field staff was implemented along with a public awareness-raising programme.

The GBR for Uruguay, submitted by the EU in 1999, established that the risk of disease occurrence in the country is negligible. Uruguay has been classified by the EU as a Level I country.

Bolivia, Ecuador, Guyana, Peru and Venezuela

Bovine spongiform encephalopathy prevention measures and specific programmes for BSE surveillance are currently being implemented in Bolivia, Ecuador, Guyana, Peru and Venezuela. Information on imports of risk material or MBM is scarce. The OIE Regional Representation for the Americas recently conducted the First Regional Training Workshop on TSE diagnosis (10), with the collaboration of prominent world scientists and specialised professionals from all countries in South America, along with other countries of the Americas. The main purpose of the workshop was to provide the region with suitable technical means to safeguard the BSE status of those countries using risk analysis technology and disease surveillance and diagnosis. Updated information on the conclusions of the workshop will be available shortly.

Discussion

Although prevention programmes were implemented in some countries in the region since the 1980s to avoid the introduction of BSE into South America, not all of countries obtained the same BSE status. For example, the EU has classified Colombia as a Level II country and Brazil as Level I, based on capacity to trace-back animals imported from countries with occurrences of BSE or those at high-risk. Other countries, such as Bolivia, Ecuador, Guyana, Peru and Venezuela, have not yet implemented the necessary measures which would determine their BSE status (Table I).

A strategy should be developed, within the framework of a regional project for the southern hemisphere, to harmonise all activities of the different countries, maintaining the quality of national prevention programmes, to achieve equivalent BSE status for all countries in the region. This would benefit not only the beef market, which currently represents 19% of world cattle population, but also the beef by-products market (e.g. the pharmacological industry). Maintaining the BSE-free status of

the region must be given high priority by the beef agro-industrial sector. As a result of activities developed by national prevention projects, Argentina and Uruguay have gained world recognition for their BSE status (based on articles on achieving BSE-free status in the OIE *International Animal Health Code* and the GBR submitted by the EU). This new regional approach should allow other countries to attain the same BSE status.

Differences in BSE risk and status among countries in South America can be seen clearly after consideration of the main items that comprise a risk assessment performed in accordance with the *International Animal Health Code*, Chapter 2.3.13., and the internal and external risk factors of the GBR assessment of the EU.

The points to be considered are as follows:

- with regard to external risks, Brazil and Colombia have recently followed other countries in South America by imposing restrictions on imports of animals and animal by-products from countries with occurrences of BSE or high-risk countries

- with regard to internal risks, differences exist in the regulations imposing bans on the use of feeds containing MBM of mammalian origin. In some countries (e.g. Chile), the ban prohibits the feeding of ruminant protein to ruminants, while in others (e.g. Argentina, Brazil, Colombia, Paraguay and Uruguay), the feeding of mammalian proteins to ruminants is prohibited. In most countries, the ban was implemented recently. Argentina is the only country that has eliminated specified risk material (SRM) from the food chain (2002).

- bovine spongiform encephalopathy notification is mandatory in six countries and all of these have implemented surveillance and monitoring systems. However, in some countries, namely: Bolivia, Ecuador, Peru and Venezuela, implementation is only at the initial stage. Although six countries have diagnostic laboratories and trained personnel, only Argentina possesses a laboratory capable of integral TSE diagnosis (histological, biochemical and molecular diagnosis under biosafety conditions for sample handling).

Conclusions

In South America, initial preventive measures against BSE were adopted by Argentina and Uruguay and then followed by other countries in the region (Brazil, Chile and Paraguay). Further measures adopted since then, and based on new scientific and technical findings, have led to the demonstration that the region is free from BSE. The early preventive actions therefore reliably protected the region from importing BSE-infected material.

A key element of the project to determine the BSE status of the region of South America was the training of personnel, the

incorporation of technology and the provision of updated information through close relationships with international organisations (such as the OIE and the WHO) and prominent international research workers. Regional actions aimed at harmonising BSE prevention and surveillance programmes, at producing objective and transparent data on the equivalence of regional BSE status and at facilitating regional and international trade have recently been launched with the support of the Inter-American Institute for Cooperation on Agriculture (IICA), the Pan American Health Organization (PAHO), the WHO and the OIE Regional Representation for the Americas.

Maintaining the BSE-free status of South America must be given high priority by the beef agro-industrial sector. Communication has led to a consensus between the animal production and industrial sectors on the advantageous situation in the region with regard to BSE and the important implications of this position on the trade of beef, beef products and by-products, whether as food commodities or inputs for specialised industries (pharmaceutical, cosmetic, food, etc.).

However, a lack of knowledge about the origin and nature of BSE, as well as the particular physico-chemical characteristics (resistance, structure) and biological characteristics (species barrier, transmissibility, long incubation period, lack of diagnostic methods on live animals) of the agent pose serious scientific questions. Research and developments in BSE diagnosis and control must be closely followed by countries in South America to strengthen, modify or adopt harmonised and suitable preventive measures to maintain the BSE status acquired by the region.

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L'encéphalopathie spongiforme bovine en Amérique du Sud : une approche régionale préventive

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Résumé

L'encéphalopathie spongiforme bovine (ESB) est une maladie neurodégénérative des bovins imputable à des prions, décrite pour la première fois au Royaume-Uni en 1986. Depuis l'apparition des premiers foyers dans ce pays, dans les années 1980, l'épizootie d'ESB s'est propagée à d'autres pays européens et asiatiques au gré des exportations de farines contaminées de viande et d'os ou d'animaux infectés. Au cours des dernières années, d'autres maladies émergentes ou ré-émergentes ont fait leur apparition dans des pays ou des régions précédemment indemnes, par suite des échanges internationaux. Devant ces conséquences négatives de la mondialisation, les programmes préventifs et stratégiques mis en place pour protéger la santé animale devront s'inscrire prioritairement dans une démarche régionale pour avoir une chance de réussite. Le succès de la prophylaxie des maladies animales passe par une réflexion mondiale, une programmation régionale et une réalisation locale.

L'Amérique du Sud a introduit ses premières mesures préventives contre l'ESB en 1989. Les mesures complémentaires adoptées ultérieurement et basées sur les dernières découvertes scientifiques et techniques ont démontré l'absence d'ESB dans la région. Ces actions préventives rapides ont permis à la région de se prémunir efficacement contre l'importation de matériels contaminés par l'ESB. La formation du personnel, la mise en œuvre des technologies appropriées et le recueil d'informations récentes sur la base d'une collaboration étroite avec les organisations internationales et les principaux chercheurs de la communauté internationale ont constitué un volet essentiel du projet visant à déterminer le statut de l'ESB en Amérique du Sud. On a récemment assisté au lancement de plusieurs initiatives régionales destinées à harmoniser les programmes de

prevención de l'ESB, à produire des données objectives et transparentes sur l'équivalence des statuts de l'ESB au niveau régional et à promouvoir le commerce régional et international. Le maintien du statut de zone indemne d'ESB doit figurer parmi les grandes priorités de la filière agro-industrielle bovine.

Mots-clés

Amérique du Sud – Analyse du risque géographique de l'encéphalopathie spongiforme bovine – Encéphalopathie spongiforme bovine – Évaluation du risque.



Planteamiento de ámbito regional para prevenir la encefalopatía espongiforme bovina en Sudamérica

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Resumen

La encefalopatía espongiforme bovina (EEB) es una enfermedad neurodegenerativa que afecta al ganado vacuno, causada por priones y descrita por vez primera en 1986 en el Reino Unido. La epizootia de EEB que se declaró en ese país en los años ochenta se ha extendido desde entonces a otros países europeos y asiáticos, vehiculada por la exportación de harinas de carne y huesos contaminadas o de bovinos infectados. En los últimos años, a través del comercio internacional, otras enfermedades emergentes o reemergentes se han propagado con rapidez a otros países o regiones que hasta entonces estaban libres de ellas. De esta consecuencia indeseable de la mundialización se desprende que la aplicación de medidas preventivas y programas estratégicos que resulten eficaces para proteger la sanidad animal debe abordarse prioritariamente a escala regional. Pensar en términos mundiales, planificar en el ámbito regional y actuar en el local constituyen las claves del éxito en la lucha contra las enfermedades animales.

En Sudamérica, las primeras medidas de prevención de la EEB se remontan a 1989. Otras medidas ulteriores, basadas en nuevos datos científicos y técnicos, han venido a demostrar que la región está exenta de EEB. Esa precoz labor preventiva ha conferido a la región un sólido escudo contra la importación de materias infectadas. Elementos integrantes del proyecto para determinar el estatus de Sudamérica respecto a la EEB fueron la formación del personal, la incorporación de tecnología y la obtención de información actualizada gracias a estrechos vínculos de trabajo con organizaciones internacionales y destacados investigadores de renombre internacional. Hace poco han dado comienzo una serie de actuaciones de ámbito regional destinadas a armonizar los programas de prevención de la EEB, generar datos objetivos y transparentes sobre la equivalencia de estatus respecto a la enfermedad en la región y facilitar el comercio regional e internacional. El sector agroindustrial de producción bovina debe conceder la máxima prioridad al objetivo de mantener el estatuto de "libre de EEB" del que hasta ahora ha gozado la región.

Palabras clave

Análisis geográfico del riesgo de encefalopatía espongiforme bovina – Encefalopatía espongiforme bovina – Evaluación de riesgos – Sudamérica.



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