### **REPUBLIC OF PANAMA**

## NATIONAL DIRECTORATE OF ANIMAL HEALTH (DINASA)



## RISK ASSESSMENT FOR BOVINE SPONGIFORM ENCEPHALOPATHY (BSE) IN PANAMA, PRESENTED TO THE WORLD ORGANISATION FOR ANIMAL HEALTH (OIE), REQUESTING ITS RECOGNITION AS A "COUNTRY WITH A NEGLIGIBLE BSE RISK", ACCORDING TO CHAPTER 11.5. OF THE TERRESTRIAL ANIMAL HEALTH CODE

Panama, on october the 12<sup>th</sup>, 2010

### **Executive summary**

In 2005, Panamanian cattle population (1,614,100 heads) were evaluated as a GBR category 1, or negligible BSE risk country by the European Food Safety Authority (EFSA), and in 2010 the country was cathegorized as Control Risk by the OIE. This population continues to be evaluated, by the Panamanian Veterinary Service, until a 9-year period was covered (2002 – 2010), in order to determine the sanitary condition of the country regarding BSE, and under a Type A surveillance program (Chapter 11.5., OIE Terrestrial Animal Health Code), Based on that chapter, cattle risk population was defined as cattle older than 24 months, that were possibly fed with concentrates, and which were mainly found in specialized dairy farms (4% of the national cattle population), and in double purpose herds (37,4%), resulting in a total of approximately 570,000 heads. During the surveillance period, 129,041.95 points were accumulated (2003-2010). In 2001, the use of MBM in ruminant feed was prohibited. Since then, this product is for exclusive use in the production of feed for poultry, swine, dogs and cats (pets), and for exportation. Only pet food containing MBM is imported. During the surveillance period (2002-2010), 1.653 animals were imported, 1.513 are still alive and 140 have died, and all were for breeding purposes. The high economic value of these animals limited their access to only a very small group of producers, and also determined their stay on the farms for long periods of up to 10 years. Training and education has been provided to a large number of technicians and producers, with the aim of strengthening and increasing the efficiency of the surveillance system to identify animals with clinical signs compatible with BSE. These activities have been strengthened through the enactment of Executive Decree 383 of 2010, which formalizes what was being done and made compulsory all measures applied by the country in accordance with Chapter 11.5 of the OIE. Based on these elements, we conclude that it is very unlikely that the domestic livestock population of Panama has been exposed to the causative agent of BSE; and therefore, Panama can be considered as negligible risk country for this disease.

### Index

1	LIST OF ACRONYMS
2	INTRODUCTION
	<ul> <li>2.1 AGRICULTURE IN PANAMA</li></ul>
3	RELEASE ASSESSMENT
U	3.1       THE POTENTIAL FOR THE RELEASE OF THE BSE AGENT THROUGH IMPORTATION OF         MEAT-AND-BONE MEAL OR GREAVES       19         3.2       THE POTENTIAL FOR THE RELEASE OF THE BSE AGENT THROUGH THE IMPORTATION         OF POTENTIALLY INFECTED LIVE CATTLE.       22         3.3       THE POTENTIAL FOR THE RELEASE OF THE BSE AGENT THROUGH THE IMPORTATION         OF POTENTIAL FOR THE RELEASE OF THE BSE AGENT THROUGH THE IMPORTATION         OF POTENTIAL V INFECTED PRODUCTS OF BOVINE OPIGIN       25
1	EVDOSIDE ASSESSMENT 20
4	<b>EXPOSURE ASSESSMENT</b> 294.1 THE ORIGIN OF BOVINE CARCASSES, BY-PRODUCTS AND SLAUGHTERHOUSE WASTE, THE PARAMETERS OF THE RENDERING PROCESSES AND THE METHODS OF CATTLE FEED PRODUCTION294.2 THE POTENTIAL FOR THE EXPOSURE OF CATTLE TO THE BSE AGENT THROUGH CONSUMPTION OF MEAT-AND-BONE MEAL OR GREAVES OF BOVINE ORIGIN50
5	OTHER REQUIREMENTS
	5.1AWARENESS PROGRAM (ARTICLE 11.5.2. 2)665.2COMPULSORY NOTIFICATION AND INVESTIGATION (ARTICLE 11.5.2. 3)705.3EXAMINATION IN AN APPROVED LABORATORY OF BRAIN OR OTHER TISSUESCOLLECTED WITHIN THE FRAMEWORK OF THE AFOREMENTIONED SURVEILLANCE SYSTEM(ARTICLE 11.5.2. 5)72
6	BSE SURVEILLANCE AND MONITORING SYSTEM (11.5.2. 4)
	6.1DOCUMENTATION THAT THE SAMPLES COLLECTED ARE REPRESENTATIVE OF THE DISTRIBUTION OF CATTLE POPULATION IN THE COUNTRY, ZONE OR COMPARTMENT
	<ul> <li>6.5 DOCUMENTATION, BASED ON THE FOLLOWING TABLE, OF ALL CLINICALLY SUSPECT CASES NOTIFIED COMPLYING WITH THE DEFINITION IN ARTICLE 11.5.21</li></ul>

7 11.6	<b>BSE</b>	HISTORY OF THE COUNTRY, ZONE OF COMPARTMENT (11.6.3. A)	ND 79
7.	1	DOCUMENTATION OF WHETHER A CASE OF BSE HAS EVER BEEN DIAGNOSED IN	THE
C	OUNTI	RY, ZONE OR COMPARTMENT	79

### 1 List of acronyms

AUPSA:	Autoridad Panameña de Seguridad de Alimentos (Panamanian Food Safety Authority)
CCTSA:	Consejo Científico y Técnico de Seguridad de Alimentos (Scientific and Technical Advisory Committee for Food Safety)
COPEG:	Convenio Estados Unidos-Panamá para la Erradicación del Gusano Barrenador (Panama - United States Commission for the Eradication and Prevention of Screwworm in Cattle)
DECA:	Dirección Ejecutiva de Cuarentena Agropecuaria (Agricultural Quarantine Directorate)
DEPA:	Departamento de Protección de Alimentos (Food Safety Department)
DINASA:	Dirección Nacional de Salud Animal (National Directorate for Animal Health)
DINASAVE:	Dirección Nacional de Sanidad Vegetal (National Directorate for Plant Health)
EEB:	Encefalopatía Espongiforme Bovina (Bovine spongiform encephalopathy)
EFSA:	European Food Safety Authority
FAO:	Organización de las Naciones Unidas para la Alimentación y Agricultura (Food and Agriculture Organization of the United Nations)
FSIS:	Food Safety and Inspection Service
GBR:	Geographical BSE-Risk
GEPESA:	Grupo Ejecutor del Programa de Emergencias en Salud Animal (Executing Group for the Animal Health Emergencies Program)
HCH:	Harina de carne y hueso (meat and bone meal)
IDIAP:	Instituto de Investigaciones Agropecuarias de Panamá (Institute for Agricultural Investigations of Panama)
IICA:	Instituto Interamericano de Cooperación para la Agricultura (Interamerican Institute for Agricultural Cooperation)
INTA:	Instituto Nacional de Tecnología Agropecuaria (National Institute for Agricultural Technology)
ISA:	Instituto de Seguro Agropecuario (Institute for Agricultural Safety)
LADIV:	Laboratorio de Diagnóstico e investigación Veterinaria (Laboratory for Diagnostics and Veterinary Investigation)
MACHISA	Matadero de Chiriquí S.A. (company name)
MER:	Material Especifico de Riesgo (Specified risk material)
MIDA:	Ministerio de Desarrollo Agropecuario (Ministry for Agricultural Development)
MICI:	Ministerio de Comercio e Industrias (Ministry of Trade and Industry)
MINSA:	Ministerio de Salud (Ministry of Health)
OIE:	Organización Mundial de Sanidad Animal (World Organisation for Animal Health)
OIRSA:	Organización Internacional Regional de Sanidad Agropecuaria (International Regional Organisation for Agricultural Health)
OPS/OMS:	Organización Panamericana de la Salud/ Organización Mundial de Salud (Panamerican Health Organisation/World Health Organisation)
PANAFTOSA	Centro Panamericano de Fiebre Aftosa (Panamerican Centre for Foot and Mouth Disease)
SENACYT:	Secretaria Nacional de Ciencia y Tecnología (National Secretariat for Science and Technology)
SINESA:	Sistema Nacional de Émergencias en Salud Animal (National System for Animal Health Emergencies)

UNESYF:	Unidad de Evaluación de Riesgo Sanitario y Fitosanitario (Sanitary and
	Phytosanitary Risk Assessment Unit)
USDA:	United States Department of Agriculture
WAHID:	World Animal Health Information Database

### 2 Introduction

### 2.1 Agriculture in Panama

The Republic of Panama is located in Central America between parallels 7° 11' and 9° 37' of north latitude, and between 77°10' and 83°03' of west longitude (figure 1). The territory is politically divided into 9 provinces and 5 indigenous regions. It has a total area of 78.200 km<sup>2</sup>, and is bordering the Caribbean Sea in the north, the Pacific Ocean in the south, Colombia in the east, Costa Rica in the west.

Panama has a population of 3.242.173 people, from which 44% is located in rural areas. Around 91% of the children go to school, the population density is estimated at 37.6 persons per square kilometer, and Spanish is the official language.

Panama's climate is considered to be tropical maritime, with influences of the two seas. It is characterized by moderately high and constant temperatures throughout the year, with slow daily and annual oscillation, abundant rainfall and high humidity. There are two well-defined annual seasons: the dry and rainy season. The dry season lasts from mid December to April, and the rainy season goes from May to December.



Figure 1. Geographical map of Panama

From 1996 to 2007, the Panamanian gross domestic product (GDP) grew at an annual rate of 5.4%. From 2006 to 2008, the agricultural sector contributed with 8.7% to the national GDP, which corresponds to 34 % of the economically active population of our country (General Controller of Panama).

### 2.1.1 Livestock production

Livestock production in Panama dates back to 1521, when Pedro Arias Davila, founder of Panama City, promoted the importation of fifty cattle from the Island of Santiago (Jamaica). These cattle entered through the province of Darien. Later, the herds were spreading from the cities of Panama, Nata and Remedios, through the Costa Rican province of Guanacaste, up to Chiapas - Mexico, and to South America using the Pacific route.

In Panama, farming is not considered as just a livestock activity, but rather as a way of living. Many families in Panama are directly or indirectly financially dependent on activities related to agriculture. Also, Panama has a long history of implementing sanitary measures to prevent the introduction and spread of diseases coming from South America to Central and North America that were affecting cattle and other

species. Indeed, the country has been historically free of FMD, and since 1966 (Decree 121 of 12 May 1966, amended in 1993 by Law No. 6) animal health control and inspection zones have been maintained in the province Darien to prevent entry of FMD into the country. In the inspection zone, the breeding, fattening, processing, sale or purchase of cattle, pigs and other cloven-hoofed animals is prohibited (Figure 2).



Figure 2. Animal control (zona de control) and inspection (zona de inspección) zones for FMD prevention

Source: Panama - United States Commission for the Eradication and Prevention of Screwworm in Cattle (COPEG)

The Panamanian livestock sector covers about 1,384,455 hectares (approximately 1.1 animals/ha.), and has always been characterized for being a traditional/familiar economic activity, with multibreed herds that are raised in extensive production systems (free ranging, with little rotation of pastures, low investment, direct watering in streams, among others), and using natural grassland pastures as the main feed source; likewise, it is very common that reproductive management of herds is carried out with natural mating.

According to the last livestock census 2009 (General Controller of Panama), there are 1,614,100 heads of cattle in Panama, distributed over 39,205 farms. Of these, 58.6% are involved in fattening of predominantly Zebu breeds, 37.4% have a double purpose activity (meat and milk), and 4% are involved in specialized dairy activities.

The next table (Table 1), shows the distribution of farms per province and type of activity. This table does not explicitly include the double purpose category; this category is included in the breeding and dairy columns.

PROVINCES	TOTAL	BREEDING	FATTENING	DAIRY
Bocas del Toro	1,282	1,099	155	28
Coclé	4,347	3,941	274	132
Colón	2,136	1,928	170	38
Chiriquí	7,305	4,724	1,267	1,314
Darién	1,543	1,372	161	10
Herrera	4,590	3,242	414	934
Los Santos	5,795	3,382	940	1,473
Panamá	4,526	3,715	626	185
Veraguas	7,615	6,809	562	224
TOTAL	39,205	30,270	4,596	4,339
PERCENTAGES	100%	77%	12%	11%

Table 1. Number of farms per province and main activity

Source: General Controller of Panama - Agricultural Census of 2001.

The cattle population consists of different breeds, depending on the different zootechnical functions, such as breeding, fattening, dairy and double purpose (meat and milk) (Table 2).

#### Table 2. Cattle population in 2006-2009

República de Panamá CONTRALORÍA GENERAL DE LA REPÚBLICA Instituto Nacional de Estadística y Censo

EXISTENCIA DE GANADO VACUNO EN LA REPÚBLICA, POR AÑO SEGÚN PROVINCIA: 2006-09

	Existencia de ganado vacuno (en cabezas) <u>1</u> /								
Provincia		Añ	ios	Variación porcentual					
	2006	2007	2008	2009(P)	2007/2006	2008/2007	2009/2008		
Total	1.561.600	1.526.200	1.603.100	1.614.100	-2,3	5,0	0,7		
Bocas del Toro	32.300	25.900	28.100	32.600	-19,8	8,5	16,0		
Coclé	101.000	101.800	98.300	111.300	0,8	-3,4	13,2		
Colón	83.300	74.300	68.100	65.900	-10,8	-8,3	-3,2		
Chiriquí	328.700	342.000	355.700	349.800	4,0	4,0	-1,7		
Darién	124.100	137.700	156.200	178.600	11,0	13,4	14,3		
Herrera	131.200	131.200	156.700	150.300	0,0	19,4	-4,1		
Los Santos	281.900	261.700	287.100	288.200	-7,2	9,7	0,4		
Panamá	234.000	213.500	209.400	192.600	-8,8	-1,9	-8,0		
Veraguas	245.100	238.100	243.500	244.800	-2,9	2,3	0,5		

1 / Para los años 2006 y 2007, la existencia se refiere al 1 de noviembre, para el 2008 al 6 de septiembre y para el 2009 al 14 de septiembre.

(P) Cifras Preliminares.

Source: General Controller of Panama (2009)

Approximately 50% of the national cattle herd is used for breeding activities. These activities are characterized by the production of replacement female and male cattle,

which are then used in the various activities of the production chain of meat and milk. Cattle feeding in this sector is based on large and extended natural grassland pastures, with little space for pasture management, and rudimentary management facilities.

During the dry season (December-April), some of the above mentioned farms (~5-10%) use supplementation based exclusively on low cost products of plant origin, such as sugarcane, molasses, rice bran, spent grain from beer breweries, cut gras (Elephant, Taiwan, Cameroon, and others), silage and hay, among others.

Fatting animals originate from breeding, dairy and double purpose farms, and fattening farms follow management strategies that are very similar to those described for the breeding production system. In the last 10 years, very few farms (<30) tried to use a feedlot feeding system in the final phase of fattening (last 6 months), however without success: high costs of production versus low market prices demotivated capital investment in this activity.

The annual culling rate is about 300,000 heads of cattle, with a mean age of 36 months, and it is primarily determined by the use of non specialized breeds with low feed conversion, and whose main source of feed is natural or improved pastures.

The current trend is to reduce the slaughter age, as the Government has implemented formal programs to support health improvement, genetic and nutritional status of herds, as well as economic incentives for livestock production (e.g. Prevention, Control and Eradication Program for Bovine Tuberculosis, Brucellosis, Bovine Screwworm Program, Bull Replacement Program, Artificial Insemination, Improved Pasture Seeds Program, and others).

These programs are intended to maintain and improve the health status of herds, and increase production efficiency, comply with regulatory classification of meat set by the National Meat Commission (Resolution No. CNC-04-02, 2002) and improve final product quality, in order to promote market access, both nationally and internationally.

It is important to mention that the country is self sufficient in terms of meat production and demand for normal consumption by the population, but not for specialized meat cuts (Hilton cuts), which represent the largest percentage of imported meat.

According to the data collected by the National Directorate of Livestock, Ministry of Agricultural Development of Panama, the dairy sector is basically the only sector using any additional supplementation to a greater or lesser extent. This activity involves the double purpose herds (37.4%), and the specialized dairy farms (4%).

The double purpose farms are characterized by low milk production (about 4 liters/animal/day) and one time milking per day only. During milking, the calf is together with the cow, which means that the calf is used to stimulate the milking. This calf is fed with the milk obtained from one quarter of the udder plus the intake derived from natural pastures, until it reaches the weaning age (7-8 months). Then, males are marketed for meat production, while females are used as replacements to increase the farmer's income.

Specialized dairy farms are characterized by using a higher level of technology and their greater efficiency (about 25 liters/animal/day), since most farmers use breeds of high genetic (Holstein, Jersey, Brown Swiss, etc.) and economic value, which substantially influences the productive life of these animals (7 to 10 years).

Feed supplementation of these specialized herds is based on concentrates and improved pastures, under partial feedlot systems, thereby achieving better production parameters in this activity. Additives used for feed production are all imported products, because the country does not have a pharmaceutical industry to provide minerals and vitamins.

Due to the high agricultural production costs in Panama, the inputs used in the production of feed for dairy cattle (corn, wheat products, rice products, soy flour, raw salt, calcite and urea) are mostly imported (Registration Department - DINASA).

The characteristics of the Panamanian cattle production described above, clearly typify the cattle production sector as an ecological and subsistence farming type. Its slow development is attributed to factors such as:

- Lack of coherent and continuous politics, and lack of transfer of technologies.
- High cost of production, low productivity
- Shift of lands dedicated to livestock to rainfed crop production with better profitability and a rapid return of investments
- Exhaustion of the land available for livestock production and the use of livestock in unsuitable ecological areas, accompanied by a progressive degradation of soils and pastures used in established farms.
- Agro-climatic characteristics in the Pacific area where the largest concentration of cattle is located, with rainfall for 6 months and an average annual rainfall of 1,500 mm, and a dry period of 180 days, during which there is fewer than 100 mm of precipitation.
- Use of poor, acid and forestry soils for livestock production.
- Low use of fertilizers and other inputs due to high costs of these services.

Because of these factors, the economically active population in rural areas has dropped drastically by 11 percentage points when compared to 2003 (45%), with a large part of this population moving to urban areas according to the General Controller of Panama (2009). As a result, the availability of labour required for the sustainability of daily activities within the agricultural sector is low.

Based on the above, we can summarize that Panamanian livestock is basically grass fed, with a minimum number of dairy farms using concentrates, which are based on plant sources, and with a sporadic use of feedlots in fattening farms.

### 2.1.2 Sheeps and goats

According to 2001 census (Table 3), the sheep and goat population are estimated at 6.024 and 6.165 heads of sheep and goats, respectively. These amounts have not changed substantially since the census, because the market demand had no major variations. Therefore, this sector is not sufficiently attractive for producers to be included in their farming activities. Sheep and goats, as bovines, are fed on natural grasslands.

FROVINCES	Guais	Slieep
Bocas	126	20
Coclé	82	56
Colón	84	33
Chiriquí	132	46
Darién	29	10
Herrera	21	16
Los Santos	37	29
Panamá	131	121
Veraguas	55	22
Comarca Emberá	1	0
Comarca Ngobe Buglçe	3	0
Total	701	353

Table 3. Number of goat and sheep farms per province

Source: General Controller of Panama, 2001

### 2.1.3 Slaughterhouses

Slaughter and processing activities of the different cattle categories in the country, are based on the Executive Order No. 41 of 1995, "by which slaughterhouses are classified according to their conditions and sanitary capacity, establishing the minimum sanitary technical requirements for all different types of slaughterhouses, and dictating other provisions."

In Panama, these activities are under the responsibility of the Department for Food Protection (DEPA), of the Ministry of Health, which maintains a permanent veterinary inspection system in the 16 existing slaughterhouses. These slaughterhouses cover approximately 98% of all slaughtered animals per year. The remaining 2% are cattle slaughtered in areas with difficult access, where meats are eaten immediately or preserved through traditional processes of smoking or salting. At these small and local slaughterhouses, parts of the carcasses that are considered non-edible by the Panamanian population (head, brain, eyes and intestines), are disposed of in open dumps, where they are eaten by scavenging birds (vultures) and other predators.

At the slaughterhouses, the official inspection system consists of a permanent team of 20 veterinarians and their assistants (approximately 30 inspectors), who perform daily ante mortem and post mortem inspections. This staff is paid by the central government, and they respond, hierarchically, to the National Meat Inspection Service (SENIC, Resolution No. 29 of 1995) of DEPA.

Slaughterhouses receiving official inspection are categorized by levels: national (5) and municipal (11). National slaughterhouses are able to receive animals from across the country, their culling volumes allow them to distribute their products in the domestic (3 provinces or more) and international markets. These five (5) slaughterhouses have their own waste processing plants (rendering), where meat and bone meal is produced by processes of cooking, drying, grinding and packaging, according to the guidelines established in the Law 23<sup>rd</sup> of 1997. The finished product is used for the production of feed for feeding poultry, pigs, dogs and cats, and for the exportation.

Municipal slaughterhouses (11) are characterized by receiving animals from nearby areas and their slaughter volumes are low. Products are distributed to local/provincial levels, and inedible waste is disposed of in municipal landfills (dumps), which are daily covered with a layer of soil.

### 2.2 Official infrastructure of the Veterinary Services in Panama

The Official Veterinary Services (OVS) are distributed over several institutions of the public sector, such as the Ministry of Health (MINSA), Ministry of Agricultural Development (MIDA) and the Panamanian Food Safety Authority (AUPSA), each developing its own activities under their respective standards (Table 4). Currently, there are 830 veterinarians nationwide, most of them (~ 85%) graduated in foreign universities, and around 33% are working for the official service.

INSTITUTIONS	N° OF VETERINARIANS
Ministry of Agricultural Development (MIDA)	125
National Comission of Meat	13
National Directorate of Animal Health	94
National Directorate of Livestock	4
Excecutive Directorate of Agricultural Quarantine	14
Ministry of Health (MINSA)	132
Panamanian Food Safety Authority (AUPSA)	14
TOTAL	271

Table 4. Distribution of Official Veterinary Service

Animal health activities, on the primary production level, are ranging from farm to slaughterhouse, and they are executed by the National Directorate of Animal Health (DINASA) of MIDA (Figure 3). Moreover, DINASA is the responsible entity for the eligibility/approval processes of regions, countries, areas, or other facilities related to livestock production; likewise, it issues all sanitary requirements for imports of live animals, semen and embryos. The verification of these requirements is conducted by the Directorate of Agricultural Quarantine (DECA) of MIDA.

#### SALUD ANIMAL



Figure 3. Organigram of DINASA

Field epidemiological surveillance is performed using the organizational structure of the 11 Regional Directorates of MIDA (Figure 4). The Agricultural Extension Agency of MIDA is responsible for the programs and their implementation. This agency usually has an administrative unit in a district or municipality. There are 75 agencies in 11 regional directorates, distributed throughout the country.



Figure 4. Map of Regional Directorates of MIDA Source: Departament of Epidemiology – DINASA

For the implementation of disease monitoring and surveillance programs, the country was divided into five animal health zones that are separated by sanitary cordons (Figure 5). To give additional support to the animal health inspection within and between the mentioned zones, there are four permanent points for the internal control movement of animals.



Figure 5. Map of Sanitary Zones Source: Departament of Epidemiology – DINASA

Within the monitoring and surveillance system, the official veterinary service also has technical staff who belong to the National Meat Commission (Resolution No. CNC-04-02, 2002). These technicians are specialized in grading carcasses of slaughtered cattle based on dental chronology, allowing the country to meet the demands of different meat markets.

The application of standards for food safety, within the national territory, are under the responsibility of the Department for Food Protection (DEPA) MINSA, and the scope of its competence starts in the slaughterhouse and ends at the fork of the consumer

(Figure 6). Their activities aim to protect the health of the population by monitoring the sanitary quality of food, and the monitoring and control of zoonotic diseases.

Figure 6. DEPA distribution



Organigrama del Ministerio de Salud. Estructura Orgánica del DEPA.

Official exportation certificates of both live animals and animal products are issued by the DINASA, DECA and DEPA.

In contrast, the processes related to food imports (issuing and verification of health requirements, eligibility/approval of countries, areas/regions, compartments, and food processing plants), for human and animal consumption, are under the responsibility of AUPSA (Figure 7).

The administrative structure of AUPSA consists of a General Manager, a General Secretariat, the National Directorate for Standards for Food Import, the National Directorate for Standards Verification for Food Import and the National Directorate for Analysis and Control of Imported Food.

When AUPSA was founded, it took over several functions of DECA and DINASA of MIDA, and of the Department for Food Protection, Ministry of Health. Currently it has a

professional and technical staff (304) located in different places where AUPSA is active.



Figure 7. Organigram of AUPSA

### 2.3 List of national applicable standards

ACT 66, NOVEMBER 10, 1947

"Approve the Sanitary Code of the Republic of Panama"

### ACT 6, ON MARCH THE 30<sup>th</sup>, 1996

"By which succeeds to Decree 121 of May 12, 1966, which established the Inspection and Control Zones for FMD in the border area with the Republic of Colombia and other provisions."

### ACT 23, JULY15, 1997

"Approve the Marrakech Agreement establishing the World Trade Organization, Protocol of Accession of Panama to the Agreement together with its Annexes and the Schedule of Commitments; will bring domestic law with international standards and other provisions"

### ACT 44, AUGUST 1, 2001

"Who establish measures to prevent introduction of FMD, bovine spongiform encephalopathy and other exotic diseases, amending Article 248 and adds article 376 of the Penal Code".

ACT 62, DECEMBER 26, 2002

"Amending articles of Law 23 of 1997, Law 2 of 1995 on the universalization of tax incentives for production and Article 376 of the Penal Code"

DECREE LAW 15, MAY 18, 1967

"Regulate by the provisions relating to infectious and contagious diseases affecting animals"

DECREE LAW 11, FEBRUARY 22, 2006 "Whereby establishing the Panamanian Safety Food Authority"

DECREE 62, JANUARY 15, 1957

"Through Regulating the Sanitary Code in relation to the Meat Inspection and Surveillance"

EXECUTIVE DECREE 9, FEBRUARY 9, 1999 "By which regulates the registration and control of veterinary drugs and food for animal consumption, and manufacturing establishments, import, distribution and sale of the same".

#### EXECUTIVE DECREE 20, APRIL 13, 1999

"By which derogates Decree 4 of 15 March 1982 and will dictate the general provisions of animal health campaigns to control and eradication of Brucellosis, Bovine Tuberculosis and Rabies"

EXECUTIVE DECREE 168, NOVEMBER 5, 2001 "Through which laid down measures necessary for the functioning of the National Animal Health Emergency"

EXECUTIVE DECREE 383, SEPTEMBER THE 27<sup>TH</sup>, 2010 "Through which is adopted the National Rules for the epidemiological surveillance of Bovine Spongiform Encephalopathy (BSE) and other Transmissible Spongiform Encephalopathies (TSE's)

RESOLUTION 29, DECEMBER 29, 1995 "Adopts the Meat Inspection Guide and meat products to be applied in all slaughter plants in the country"

RESOLUTION 002-2010 "Through which the Panamanian Food Safety Authority adopted, as equivalent, the risk categorization made by the World Organization for Animal Health (OIE) for recognition of member countries in relation to Bovine Spongiform Encephalopathy (BSE) "

RESOLUTION ALP-O45-ADM-01, JUNE 1, 2001

Forbid the use of meat, bone, blood, fat and other risk materials from ruminants domestic or imported for the manufacture of ruminant feed intended for human consumption".

RESOLUTION DAL-093-ADM-2005, NOVEMBER 15, 2005

Creates the (UNESYF) for the evaluation of sanitary or phytosanitary countries and establishments and processing plants that can export their products to Panama. "

RESOLUTION AUPSA-DINAN-116-2009, DECEMBER 31<sup>ST</sup>, 2009. "By which is issued the requirement for the introduction of foods containing ruminant protein source, for exclusive consumption of dogs and cats"

### 3 Release assessment

### 3.1 The potential for the release of the BSE agent through importation of meatand-bone meal or greaves

# 3.1.1 Documentation to support claims that meat-and-bone meal, greaves or feedstuffs containing either meat-and-bone meal or greaves have not been imported

MIDA/DINASA, through Resolution 045 2001, replaced by Executive Decree 383 of September 27<sup>th</sup>, 2010, introduced a ban on the import of meat and bone meal as a raw material, as well as on cattle feed containing it, for bovine consumption. This organisation controlled the importation until 2006, after which AUPSA was created. Then, the responsibility for verification of the compliance with the mentioned resolution was shifted AUPSA.

The Republic of Panama has not imported meat and bone meal, or greaves for feeding of livestock, in the last 9 years. During this period, only food for dogs and cats, containing this ingredient in its composition, was imported; the origin of which is detailed in Table 5.

In addition to the above, and considering that from May 2010, Panama was recognized by the OIE as a Controlled Risk country for BSE, AUPSA decided to update its procedures for the import of dog and cat food, supported by Resolution 002-2010;" through which, AUPSA assumes as equivalent the risk categorization made by the OIE, for recognition of member countries, in relation to BSE," which is in accordance with Resolution 116-2009 of December 31<sup>st</sup> 2009, that basically impose the following:

- For controlled risk countries, the risk assessment of the OIE is recognized, and it is complemented by a "origin visit" to the processing plant, in order to verify compliance with Chapter 11.5 of the OIE, related to BSE.

- For undetermined risk countries, AUPSA will carry out a full risk analysis, in order to verify compliance with Chapter 11.5 of the OIE, related to BSE.

# 3.1.2 Documentation on annual volume, by country of origin, of meat-and-bone meal, greaves or feedstuffs containing them imported during the past 8 years.

As already mentioned in point 3.1.1., there have been authorized importations of feed containing MBM, but only for use for dogs and cats.

Prior to their importation, these products must be registered, and comply with the sanitary requirements established by the National Standard Direction for Food Import, which are based on Chapter 11.5. Terrestrial Animal Health Code of OIE.

Upon entering the country, these products must be accompanied by an Export Health Certificate issued by the corresponding Competent Authority, attesting the compliance of the provisions of the import requirement.

The import and verification declarations of these products, at different entry points of the country, categorize them as pre-packaged petfood, ready to use, and containing or not, meat and bone meal.

After entering the country, this petfood is sold in various stores, veterinary pharmacies and markets in the country, under the supervision and control of DINASA.

It is Important to mention that after the recognition of Panama by the OIE as a Controlled Risk country for BSE, AUPSA has updated its procedures for imports of HCH through Resolution 116-2009 of December 31<sup>st</sup>, 2009, which states that for introduction of dog and cat food made with ruminant MBM, shall address the risk categorization of the exporting country, and it must comply with the guidelines established by the OIE in terms of processing and labeling, which must include a statement indicating that the product should not be used for feeding cattle, buffaloes, sheep and goats.

In addition, during the period from 2003 to 2010, Panama imported ready to use shrimp feed from Peru, USA, Canadá, Brazil, Guatemala, Bulgary, England, Mexico, Spain and Ecuador, which contains fishmeal, as the main source of protein.

The following table (Table 5) describes the import of pet food which may contain meat and bone meal in its composition.

COUNTRY/ YEAR	2002	2003	2004	2005	2006	2007	2008	2009	2010	Total
France	11	0	0	0	0	14	10	5	0	40
Germany	0.20	0	0	0	0	0	0	0	0	0.20
Holland	0	0	0	0	0	0	0.50	0	0	0.50
Belgium	0	0	0	0	0	0	0	0.20	0	0.20
United States	4,554	4,784	0	0	0	2,131	2,094	1,846	1	15,410
Canada	8	0	0	0	0	20	7	0	4	39
México	20	0	1,488	1,789	745	298	642	840	133	5,955
El Salvador	0	0	4	0	0	0	0	0	0	4
Costa Rica	1,484	1,948	3,831	3,537	3,909	23,698	7,321	5,358	284	51,370
Guatemala	0	0.20	0	0	0	0	0	0	0	0.20
Puerto Rico	0.02	0	0	0	0	0	0	0	0	0.02
Honduras	0	0	0	0	0	139	622	3,336	0	4,097
Peru	0	0	0	0	0	0	59	72	52	183
Brazil	10	0	383	954	199	1,427	770	770	0	4,513
Colombia	0	0	0	0	1	139	404	177	0	721
Argentina	0	0	0	0	0	0	0	9	32	41
Chile	0	52	265	51	0	51	0	25	0	444
China	0	0	0	0	0	11	13	11	0	35
Thailand	0	0	0	0	0	0	0	0.06	0	0.06
TOTAL	6,087.30	6,785	5,971	6,331	4,854	27,928	11,943	12,449.26	505.81	82853.18

Table 5. Import of pet foods that may contain MBM (in metric tons)

Source: Excecutive Directorate of Agricultural Quarantine – MIDA (2002-2006). Panamanian Food Safety Authority – AUPSA (2006-up to August 31<sup>st</sup> 2010).

According to information provided by the AUPSA, the drastic decrease in the above table on food imports for consumption by dogs and cats, containing protein of ruminant origin, is attributed to increased demands on the AUPSA's requirements, what has led importers to prefer foods containing avian protein.

The following table (table 6) describes importation of shrimp food in 2009-2010.

COUNTRY OF ORIGEN	VOLUME 2009	VOLUME 2010
Ecuador	280Ton	902.4 ton
Perú	260Ton	1127.14 ton

Table 6. Feed imports for shrimps in 2009-2010

Brasil	0	0.78 ton	
Bulgaria	0	2.09 ton	
Canadá	0	0.89 ton	
España	0	23.50 ton	
Estados Unidos	0	593.71 ton	
Inglaterra	0	2.50 ton	
México	0	0.45 ton	
Taiwan	0	0.12 ton	
TOTAL	540Ton	2653.65 ton	

Source: Panamanian Food Safety Authority

# 3.1.3 Documentation describing the species composition of the imported meat-and-bone meal, greaves or feedstuffs containing them.

Panama imports dog and cat food, firstly taking into account that to date there is no scientific evidence to restrict the use of MBM in its preparation, and secondly, there was not any industry in Panama, before 2009, involved in manufacturing these products.

DINASA (Act 23 of 1997) through the Department of Registration and Accreditation, required until 2006 that all food for animal consumption must submit the technical data sheet product prior to its entry into the country and/or its marketing, in order to acquire its sanitary registration. This activity is well regulated by the Executive Decree No 9 of 1999, which states that the information submitted for purpose of registration of imported feed for animal consumption has affidavit value, and the imported feeds are just intended to feed dogs and cats.

The above mentioned function of DINASA changed with the enactment of Decree Law 11 of 2006, establishing the AUPSA. Since then, AUPSA has become responsible for the control and verification of feed import procedures for animal consumption. This process begins with the request of the importer to register the animal feed and the request of the sanitary requirements for importing these products, according to Resolution 002-2010;" through which, AUPSA assumes as equivalent the risk categorization made by the OIE, for recognition of member countries, in relation to BSE," which is in accordance with Resolution 116-2009 of December 31<sup>st</sup> 2009, that basically impose the following:

For controlled risk countries, the risk assessment of the OIE is recognized, and it is complemented by a "origin visit" to the processing plant, in order to verify compliance with Chapter 11.5 of the OIE, related to BSE.
For undetermined risk countries, AUPSA will carry out a full risk analysis, in order to verify compliance with Chapter 11.5 of the OIE, related to BSE.

Subsequently, the importer electronically notifies the importation, and indicates when and where the food will arrive. After that, the cargo is inspected, making sure it complies with the established import requirements, and inspectors proceed with appropriate sampling for laboratory analysis. Once it is found that feed has met all sanitary requirements laid down, it is released from the entry point and its introduction into the country and therefore its marketing, is authorized. Once this stage is completed, food is considered as naturalized, and it falls under the supervision and control of DINASA.

### 3.1.4 Documentation, from the Veterinary Service of the country of production, supporting why the rendering processes used to produce meat-and-bone meal, greaves or feedstuffs containing them would have inactivated, or significantly reduced the titre of BSE agent, should it be present.

Since the ban made by Resolution 045, 2001, Panama has only dealt with import requests for food for dogs and cats, containing MBM in its composition.

Starting with DINASA (Act 23 of 1997), and subsequently AUPSA (Decree Law 11 of 2006), it was established that prior to the introduction into Panama, feed for animal consumption must comply with sanitary requirements issued for the product.

Until 2006, these requirements were developed by the Sanitary and Phytosanitary Evaluation Unit (UNESYF), of DINASA – MIDA, and after 2006 they were issued by the National Directorate of Standards for Food Import of AUPSA.

### Conclusion of chapter 3.1:

Starting in 2001, Panama has banned imports of MBM, or feed containing MBM for ruminant feed. Since then, import authorizations have been limited to for dog and cat food that may contain MBM. Pet food enters the country ready-to-use and pre-packaged. Due to their high costs, these products are only consumed by a small segment of the canine and feline population of Panama.

Based on this information, we conclude that the import of MBM and feed containing MBM into Panama, does not pose a significant risk for releasing the causal agent of BSE.

# 3.2 The potential for the release of the BSE agent through the importation of potentially infected live cattle

# 3.2.1 Documentation including tables on the country, zone or compartment of origin of imports. This should identify the country, zone or compartment of origin of the cattle, the length of time they lived in that country, zone or compartment and of any other country in which they have resided during their lifetime.

Over the last 9 years, the Republic of Panama has imported live cattle exclusively for reproduction, aiming to improve the genetics of the national flock. All imported animals were born, raised and arrived directly from the United States, Costa Rica, Nicaragua, Guatemala and Mexico, in line with the established sanitary requirements for importation. The details of these imports are presented in Table 7.

These imports are inspected by DINASA through the Executive Direction of Farming Quarantine (DECA) of MIDA at the point of entry of the animals. Prior to arrival, the trader has to obtain a phytozoosanitary import license from DECA.

This license provides vital information to the epidemiological monitoring and surveillance system of DINASA for the traceability of the imported animals (name of the exporter, place of origin of the animals, breed, age, number of animals, purpose, number of identification or earring, among others).

After arrival in Panama, the imported animals have to go through a 15-day quarantine period in one of the quarantine stations (Paso Canoas and Tocumen). During this period, an official veterinarian is conducting routine clinical examinations and collecting samples for laboratory analyses.

When no clinical signs have been observed that may indicate any transboundary OIE's listed disease, by the end of the quarantine period, and after these observations are supported by satisfactory laboratory results, the responsible official veterinarian releases the animals from quarantine for their further transport to their final destination.

In addition to the above, and considering that from May 2010, Panama was recognized by the OIE as a Controlled Risk country for BSE, procedures for the importation of live animals have been updated, supported by Executive Decree 383 of 27 September 2010, "Whereby adopting the National epidemiological surveillance Rules of Bovine Spongiform Encephalopathy (BSE), and other Transmissible Spongiform Encephalopathies (TSE's)" which states in Article 29 that the DINASA and AUPSA, within the scope of their competences, adopt the requirements of import and transit of animals and their products, made from substances derived from ruminants which shall refer the recommendations adopted by the Terrestrial Animal Health Code of OIE.

Similarly, Article 31 of Executive Decree 383 of 2010, states that AUPSA and DINASA, within the framework of its competences, must maintain records of imports of live animals, animal products and animal food. This record shall include the following information:

a) The origin and destination of animals and animal products imported into the country, identification of the person or former owner of the animals and products, and their destiny, being a new buyer or the slaughterhouse;

b) the origin, destination, registration number, ingredients, brand name of the ruminant feed, or feed containing ruminant MBM imported into the country.

**3.2.2** Documentation including tables describing origin and volume of imports. Panama has imported live cattle for the exclusive purpose of reproduction from the United States of America, Mexico, Guatemala, Nicaragua and Costa Rica.

Once the animals go through the control procedures described in point 3.2.1, DINASA issues an official animal permission of transfer (SA4), which allows the owners of the animals to move them to the cattle farms.

As mentioned previously, the purpose of the importation of cattle is reproduction. Therefore, imported animals have a high genetic and economic value. It also explains why usually only small groups of animals are imported, because only few producers have the financial capacity to buy these animals. These producers are generally very well known in the rural areas of the country.

The main imported breeds specialized for beef production are Brahman, Senepol, Simmental, Angus, Beefmaster, Nelore, Bradford, Braunvieh and Fleckvieh. For milk production the main imported breeds are Holstein, Jersey and Swiss Brown.

The farms that are importing cattle are registered in the national epidemiological monitoring and surveillance system with a sequential property number, which includes data regarding the province, district and municipality, and moreover these farms are geo-referenced.

Since the categorization of Panama as a controlled risk country, and considering that, according to the evaluation team of the OIE (Document 78 SG/12/CS3 C, Annex 13<sup>th</sup>), the failure to obtain negligible risk categorization on May 2010, was mainly due to the possibility that the BSE's agent had entered the country through the introduction of live animals, the Veterinary Service decided to conduct an in-depth tracking of these

animals, in order to establish the exact location of dead animals, and those coming from the United States during the surveillance period, whose results are detailed in Tables 13 and 14, respectively.

As a result of such tracking, it was possible to determine the location, probable cause of death and disposal of carcasses, as well as geo-referencing of the farms, where animals coming from the United States were located; considering that this is the only country from which Panama has imported live animals that reported one positive case of indigenous BSE.

The following table indicates the number of imported animals, by country of origin and year (from 2002 to August 31<sup>st</sup> 2010).

	Table 7: Imported bevines by country of origin and year 2002 2010 (in noddo)									
Country	2002	2003	2004	2005	2006	2007*	2008	2009	2010**	TOTAL
USA	53	233	0	0	0	0	145	189	80	700
Costa Rica	0	9	38	36	33	0	105	8	99	328
Nicaragua	14	10	0	0	11	0	0	0	0	35
Mexico	34	1	78	0	0	0	13	110	165	401
Guatemala	0	0	0	0	0	0	0	106	83	189
TOTAL	101	253	116	36	44	0	263	413	427	1653

Table 7. Imported bovines by country of origin and year 2002-2010 (in heads)

\* In 2007, no cattle were imported; only cattle from Guatemala and Costa Rica were introduced for an exhibition in the Cattle Exhibition of Central American Isthmus (EXPICA), after which they all returned to their countries of origin.

\*\* Data registered until August 31<sup>st</sup> 2010.

The following table (Table 8) provides more detailed information about the imported animals.

YEAR	COUNTRY OF ORIGIN	AMOUNT	TYPE Milk, Meat, Double	PURPOSE	Age of importation
2002	USA	53	Meat	reproduction	8 a 27 months
	Nicaragua	14	Meat	reproduction	1.5 a 3.5 years
	México	34	Meat	reproduction	1.5 a 3.5 years
2003	USA	233	Double	reproduction	9 a 48 months
	Costa Rica	9	Meat	reproduction	1.5 a 3.5 years
	Nicaragua	10	Meat	reproduction	1.5 a 3.5 years
	México	1	Meat	reproduction	1.5 a 3.5 years
2004	México	78	Meat	reproduction	1.5 a 3.5 years
	Costa Rica	38	Meat	reproduction	1.5 a 3.5 years
2005	Costa Rica	36	Meat	reproduction	1.5 a 3.5 years
2006	Nicaragua	11	Double	reproduction	1.5 a 3.5 years
	Costa Rica	33	Double	reproduction	1.5 a 3.5 years
2008	USA	145	Meat	reproduction	10 a 38 months
	Costa Rica	105	Double	reproduction	4 a 28 months
	México	13	Double	reproduction	13 a 24 months
2009	USA	189	Milk/Meat	reproduction	10 a 38 months
	Costa Rica	8	Double	reproduction	4 a 28 months
	México	110	Double	reproduction	13 a 24 months
	Guatemala	106	Milk	reproduction	15 a 24 months
2010**	USA	80	Meat	reproduction	10 a 38 months
	Costa Rica	99	Milk/Double	reproduction	4 a 28 months

Table 8. Li <sup>,</sup>	ve imported	l cattle	per	year,	country	of	origin,	amount,	type,	purpose,	and
age at the i	mportation	time to	the o	countr	ſy*						

	México	165	Double	reproduction	8 a 24 months
	Guatemala	83	Milk	reproduction	18 a 36 months
TOTAL		1653			

\* Source: Excecutive Directorate of Agricultural Quarantine. Data registered until August 31<sup>st</sup> 2010.

# 3.2.3 Documentation demonstrating that risks are periodically reviewed in light of evolving knowledge on the BSE status of the country, zone or compartment of origin.

The DINASA receives information about the global epidemiological situation through WAHID (OIE), the International Regional Organisation for Agricultural Health (OIRSA) and through the national Veterinary Services of our trading partners.

In case of an epidemiological event somewhere in the world related to BSE or another transboundary OIE's listed disease, DINASA supported by UNESYF (founded through Resolution DAL-093-ADM-2005), and the Executive Decree 383 of September 2010, conducts a risk assessment. Based on the outcomes of this risk assessment, DINASA will establish the necessary preventive or restrictive measures, which are subsequently implemented by DECA at the points of entry into Panama.

The UNESYF is the responsible organism for the evaluation of the sanitary situation in regions, countries, zones and establishments, to determine their eligibility for exporting live animals and animal products to Panama. Members of this organism belong to the different relevant directorates and units of MIDA. UNESYF meets twice monthly and its recommendations are directed to the National Director of Animal Health, who then issues the final decision by means of a Resolution.

### Conclusion of chapter 3.2:

In the last 9 years, the volume of importation of live animals to Panama represented 0,29% of the bovine population over 24 months of age. All animals were imported for the purpose of reproduction, during the mentioned period, a condition currently reinforced through Article 30<sup>th</sup> of Executive Decree 383, 2010.

These animals have been imported from countries where BSE has never been detected and /or from those categorized as controlled risk for the OIE.

After the categorization of Panama as a controlled risk country, the Veterinary Service of the Republic of Panama, conducted a strict tracking of imported animals, and established the location, probable cause of death and disposal of carcasses.

Similarly, it was established the geo-referenced of the farms where are located all animals imported from the only country that has reported an indigenous case of BSE (USA).

Based on the above, it can be concluded that the possibility that the BSE agent has entered Panama through the introduction of live animals is negligible.

# 3.3 The potential for the release of the BSE agent through the importation of potentially infected products of bovine origin

3.3.1 Documentation on the country, zone or compartment of origin of imports. This should identify the country, zone or compartment of origin of cattle from which the products were derived, the length of time they lived in

### that country, zone or compartment and of any other country in which they have resided during their lifetime.

Within products of bovine origin that may be relevant for the risk of release of the BSE agent, Panama has only imported cuts of bovine meat with and without bone, during the last 9 years. These products were imported from the United States, Canada, Chili, Nicaragua, Costa Rica, and Mexico, and were destined for sale through hotels, restaurants, supermarkets and national markets. These importations followed the same procedure mentioned earlier, in compliance with the current national rules.

The imports of meat of bovine origin have followed the current import procedure. First, both the exporting country and the plants must go through an eligibility-approval process. Once the country and plant have been approved, each shipment must be accompanied by an official certificate issue by the competent authority where it is stated the products have been processed according to the recommendations established by AUPSA, taking into account the OIE Terrestrial Animal Health Code. Based on this Code, our country does not allow the importation of mechanically separated meat.

Panama does not have a pharmaceutical or cosmetic industry. In consequence, it does not import products derived from bovines for use in this activity. Therefore, all medicines and cosmetics marketed in Panama are imported, and they enter the country ready to be used.

### 3.3.2 Documentation describing origin and volume of imports

The following table presents the imports of cuts of bovine meat with bones during 2002-2009.

							/				
COUNTRY	2002*	2003*	2004*	2005*	2006*	20	07	2008	2009	2010**	
USA	109	259	0	126	166	36(i)	19(ii)	26	16	39.1	
Nicaragua	42	92	0	109	353	31	0	0	0.2	0	
México	0	0	0	0	0	0	0	1	0	0	
Chile	0	0	0	0	0	0	0.9	0	0	0	
Canada	0	0	0	0	0	0	0	0	0	0.339	
Costa Rica	0	0	0	0	0	0	0	0	0	56.2	

Table 9. Imports of bovine meat cuts with bone (tons) from 2002-2010

\* In these years the statistics do not allow to separate between meat cuts with or without bone, therefore the numbers in these years include both categories

(i) These numbers have been reported by DECA until May of 2007.

(ii) These numbers have been reported by AUPSA from June of 2007 onwards

\*\* Data registered until august 31<sup>st</sup>, 2010.

An important aspect to highlight, in the table above, is that Panama only allows bone steaks from the USA and Canada, coming from processing plants included in the official list of plants of these countries, which have complied with the provisions of Chapter 11.5 of the Terrestrial Animal Health Code of the OIE. In addition, In the USA case, it was agreed, as regulated in Resolution 001-2007 of February 22<sup>nd</sup>, 2007, that those intended processing plants to export bovine products to Panama, should be additionally subjected to the provisions of the Export Verification Program (EV Program, FSIS-USDA), whose main purpose is to reassure compliance with OIE standards with regard to BSE.

# 3.3.3 Documentation demonstrating that risks are periodically reviewed in light of evolving knowledge on the BSE status of the country, zone or compartment of origin.

Before 2006, the risk assessments for the importation of products of bovine origin were conducted by the UNESYF of the DINASA of the MIDA. After that, AUPSA was created and assumed the competence to conduct risk assessments for imports of animal products destined for human or animal consumption.

After completing the above risk assessments, they are under consideration to the CCTSA, an associated organism that is constituted by representatives of MINSA, MIDA, MICI, SENACYT, the University of Panama and the AUPSA. The CCTSA meets once a month and its decisions are taken by consensus of the majority of its members.

For the recognition of Equivalence of the Sanitary Systems of the United States and Canada, Panama conducted evaluations of the animal health situation in these two countries, and of the level of their compliance with the international standards of the OIE. In the U.S. case, it was agreed as regulated in Resolution 001-2007 of February 22<sup>nd</sup>, 2007, that those intended processing plants to export bovine products to Panama, should be additionally subjected to the provisions of the Export Verification Program (EV Program, FSIS-USDA), whose main purpose is to reassure compliance with OIE standards with regard to BSE.

For Mexico, Guatemala, Nicaragua and Chile, Panama carried out evaluations for the eligibility/approval of the veterinary services of these countries, as well as for the sanitary conditions of the processing plants, in order to verify the compliance with their national norms and with the standards adopted by Panama

In addition to the above and considering that from May 2010, Panama was recognized by the OIE as a Controlled Risk country for BSE, AUPSA decided to update its procedures for the import of dog and cat food, supported by Resolution 002-2010;" through which, AUPSA assumes as equivalent the risk categorization made by the OIE, for recognition of member countries, in relation to BSE," which is in accordance with Resolution 116-2009 of December 31<sup>st</sup>, 2009, which basically impose the following:

For controlled risk countries, the risk assessment of the OIE is recognized, and it is complemented by a "origin visit" to the processing plant, in order to verify compliance with Chapter 11.5 of the OIE, related to BSE.
For undetermined risk countries, AUPSA will carry out a full risk analysis, in order to verify compliance with Chapter 11.5 of the OIE, related to BSE.

### Conclusion of chapter 3.3:

Panama has imported very little bovine meat cuts (with and without bone) over the last 9 years. The main purpose of importation was to meet the consumer demands in the exclusive hotels and restaurants (Gourmet); and on a smaller scale imports were distributed to some local markets.

All shipments are inspected to ensure compliance with the requirements at the different points of entry. Also, they are subjected to random sampling, whose frequency depends on the risk food categorization (high, medium or low risk), and on the historical laboratory results for each product.

The import of meat is subjected to sanitary requirements issued by AUPSA in accordance with the provisions of Chapter 11.5, of the Terrestrial Animal Health Code

of OIE, and cosmetic products that are imported are all finished products, because these industries are not present in Panama.

Based on the above, it can be concluded that the importation of products of bovine origin into Panama does not represent a significant risk for the release of the causal agent of BSE.

### 4 Exposure assessment

### 4.1 The origin of bovine carcasses, by-products and slaughterhouse waste, the parameters of the rendering processes and the methods of cattle feed production

# 4.1.1 Documentation describing the collection and disposal of fallen stock and materials condemned as unfit for human consumption.

DEPA (MINSA) is the responsible national organization for the monitoring and veterinary supervision in the slaughter and processing plants. This responsibility was assigned to DEPA by means of Law 66 of 1947, adopting the National Sanitary Code and later regulated by means of the Decree 62 of 1957 regarding the Inspection and Monitoring of Meats. Later, Resolution 29 of 1995 was issued, which adopts the Guide for Inspection of Meat and Meat Products applicable for all processing plants of the country.

This Guide specifies the procedures for slaughter and killing of cattle that entered the slaughterhouse. It also specifies the points of the slaughter line at which veterinary inspection must be conducted and the aspects that must be inspected by the official veterinarian.

An ante-mortem inspection is conducted when cattle enter the premises of the slaughter plant, during which the veterinarian determines the health status of the animals and authorizes their slaughter. When an animal shows symptoms compatible with BSE or another disease, it is separated and observed for a period of time, which allows the veterinarian to decide on the final destination of the animal.

It is important to highlight that animals found dead in the farms, or in the waiting area of the premises, or that died during transport, do not enter the slaughterhouse (Decree No. 62, 1957).

During post-mortem inspection the veterinarian evaluates the heads, carcasses and organs to determine if they are fit for human consumption. If they are not considered fit for human consumption, these products are sent to the rendering plants or to the municipal garbage dumps, together with cattle found died during transport or in the waiting area.

With the issuance of Executive decree 383 of September 27<sup>th</sup>, 2010, the procedures outlined above were updated. So, this Executive Decree states in Article 16 the procedures for the age calculation, noting that the sampling program in slaughterhouses, as the value for surveillance, together with the head of the inspection system, will determine the age of ruminants using the dentition system, and will keep all records, following the registration of the official traceability system.

In addition to this, the incorporating Article 17 of Executive Decree 383 of 2010, stipulates that without prejudice to national regulations on slaughterhouses and meat inspection, the slaughter and carcass processing plants must keep a track record of ruminants and its parts, which enter the facilities. This record shall include the name and contact details of the plant manager, as well as age, species and origin of the ruminants, the results of ante and post mortem, and management carried out over the ruminants. It also indicates that the responsible official staff for inspection, at the slaughterhouse, will verify and document that the SRM's are removed from the food chain and specifically states that SRM's can not enter the processing plant for debris.

The information contained in the record must be available to the official inspection personnel of the Ministry of Health (DEPA), and DINASA.

Regarding non-ambulatory animals, the Article 18<sup>th</sup> of Executive Decree 383 of 2010, provides that cattle and other ruminants, eventually arriving in non-ambulatory status, or to be slaughtered in emergency condition, or that during the ante mortem inspection show any signs of neurological disease, will be considered doomed animals, and its parts will be considered SRM's.

According to the preceding paragraph, condemned animals shall be sampled for BSE lab analysis, confiscated and declared unfit for the production of food for human or animal consumption, fertilizers, cosmetic, pharmaceutical and biological products, or medical supplies. The animal body parts considered as SRM's, will be eliminated, and the Department of Food Protection will notify it, to the DINASA, according to the procedure established by the Terrestrial Animal Health Code of the OIE, in application of the present regulation.

Official veterinarians will declare if the animal is suitable for slaughter and human consumption, or for production of food for animal consumption, as an exception to paragraph one of Article 18 of Executive Decree 383 of 2010. For the destruction of animals declared as "suspected case" or "condemned," shall apply the provisions of Terrestrial Animal Health Code of OIE.

The Article 19<sup>th</sup> of Executive Decree 383, 2010, regulates the applicable methods for stunning and slaughter, noting that the ban on the use of ruminant stunning techniques, before being slaughtered, what may cause the expansion of causal BSE agent and other TSE's, including the injection of compressed air or gas into the cranial cavity and cutting the spinal cord. This decree also notes that the National Surveillance Program of BSE and other TSE's through the DINASA, in accordance with the guidelines issued by the Terrestrial Animal Health Code of OIE, may recommend to the General Health Director of MINSA, the restriction on the use of other methods of stunning and slaughter, which may cause a risk of spread of causal agent of BSE, and other TSE's.

Regarding the removal and disposal of specified risk materials (SRM's), Article 20<sup>th</sup> of Executive Decree 383-2010, establishes a series of procedures in the slaughterhouse, namely:

1. All slaughterhouses will extract, identify and dispose the SRM's, under the supervision of the official inspection service of DEPA.

2. The separation of muscle tissue from the bones of the head and spine cord, will be prohibited by mechanical, or high pressure methods.

3. Slaughterhouses must develop and implement documented procedures for the removal and disposal of SRM's, and to prevent contamination to other products.

4. With the exception in paragraph 2, the SRM's must be in the custody of official veterinary service (DEPA), who shall verify and record its destruction, in accordance with procedures established by the Terrestrial Animal Health Code of OIE.

The Article 21<sup>st</sup> of Executive Decree 383-2010, establishes the procedure for the reduction of infectivity, and states adopting the procedures of debris treatment plants and reduction of infectivity established by the Terrestrial Animal Health Code of OIE. DINASA, through the Department of Registration, shall publish these procedures, which will be forward to the treatment plant debris.

On farms dead animals, do not enter the human or animal food chain, (Decree 62 of 1957). Most of them are buried or burned, and in some cases, they are consumed by birds of prey and other predators. See Table 13.

Table 10 describes the annual slaughter volume.

YEAR	AMOUNT (heads)
2003	265,784
2004	270,649
2005	276,494
2006	292,719
2007	297,086
2008	307,042
2009	335,645
2010*	137,894
TOTAL	2,183,313

Table 10. Volume of slaughtered cattle in Panama in the years 2003-2010

\*Data recorded until August 31<sup>st</sup>, 2010, from MINSA/DEPA

# 4.1.2 Documentation including tables describing the fate of imported cattle, including their age at slaughter or death

Once imported cattle left the quarantine station, they are under the supervision of the national epidemiological monitoring and surveillance system of the DINASA. For the purpose of traceability, DINASA maintains a database of the farms that have imported cattle.

Because of their high economic and genetic value, and of their zootechnical function, imported cattle usually remain on the farm, for a period of 7 to 10 years, after which they are slaughtered.

From May 2010, Panama was recognized by the OIE as Controlled Risk country for BSE, and it has updated the procedures for the importation of live animals, supported by Executive Decree 383 of September 27<sup>th</sup>-2010, "Through which adopts the National for the epidemiological surveillance regulations of Bovine Spongiform Encephalopathy (BSE) and other Transmissible Spongiform Encephalopathies (TSE's)."

The Executive Decree 383-2010, sets out in Article 30<sup>th</sup>, that all ruminants entering the country will receive from the time of admission, a registration number, which will become thereafter, his sanitary identification number. According to DINASA's regulations, the only authorized use, for imported animals, will be the reproduction.

The slaughter of imported animals will be controlled by an official veterinarian, and the animal owner must notify in advance, to the nearest MIDA agency (fifteen (15) days), the exact date in which the animal will be slaughtered, for its supervision, relevant communication and sampling for laboratory analysis of BSE.

In case of death on the farm, or during transport, the animal owner shall immediately notify the DINASA veterinarian, for issuing the certification of death, taking samples for laboratory analysis of BSE, and controlling of the body destruction, to ensure that these animals do not enter the human or animal food chain. Failure to comply with the provisions of this Article, shall result in the imposition of the penalties provided for by Act 23 of 1997, and its amended.

Below, the final destination of the cattle that were imported from 2002 to 2010 (Table 11, 12), is detailed.

Importer - owner	Number of animals	Country of origin	Year of entry	Destination (province)	
Hermes Rodriguez	21	USA			
Ganadera F.A Virzi L. S.A	34	Mexico	2002		
Hacienda Cenegal	15	USA			
Ganadera Martinelli	26	USA			
Leonel Chang	1	USA	2003		
Agropecuaria Pacifico Sur S.A	10	Nicaragua			
Felipe Virzi	1	México			
Felipe Virzi	15	México	2004		
Hacienda Cenegal S.A	1	Costa Rica	2004	Veraguas	
Felipe Virzi	12	Costa Rica	2006		
Guido Martinelli	7	USA			
Centro Genetico Ganadero	3	USA	2008		
Felipe Virzi	22	Costa Rica			
Ganadera Stefano	16	USA			
Hacienda Cenegal	12	USA	2009		
Arturo Saldaña/Jaime Chen	5	USA	2003		
Felipe Virzi	27	México			
Aquiles Espino	24	USA	2003	Herrera	
Luis Garuz	6	USA			
Rocco Melillo	11	USA	2003		
Eduardo Urriola	10	USA	2000		
Gabriel A. Duque	15	USA			
Mona Lisa Paredes	5	Costa Rica	2005		
Belca Latin In	11	Nicaragua	2006	Panamá	
Juan Miguel Clark	36	USA		i anama	
Grupo Altamirano	17	USA	2008		
Hacienda Tanara	1	Costa Rica			
Charles David Link	7	Costa Rica	2009		
José Victor Urrutia 3		USA	2010		
William Deterine	3	USA	2010		
Inv. Para el Desarrollo de Coclé	12	USA		Coclé	
Ganadera Karla Mary	15	USA	2008		
Ramón Cedeño	7	USA			
Ganadera Karla Mary	16	USA	2009		
A.Sinclair/Agropecuaria Don Arcelio	17	USA			

Table 11. Destination of the imported cattle by province of 2002 to 2010\*

Hacienda Multiganadera	35	USA		
Rancho Santa Marta	7	USA		
Ganadera Karla Mary	23	USA		
Inv. Para el Desarrollo de Coclé	106	Guatemala		
Inv. Para el Desarrollo de Coclé	65	México		
Ganadera Karla Mary	35	USA		
Inv. Para el Desarrollo de Coclé	44	Guatemala	2010	
Inv. Para el Desarrollo de Coclé	165	México	2010	
Aurelio Escalona	3	USA		
Hacienda Hermacor	7	USA	2009	Colón
Norberto R. Delgado Duran	2	Costa Rica	2004	Darién
Franklin Mora	22	USA	2002	
Alexis Sinclair	28	USA		
Abdiel Gonzales	1	Costa Rica	2003	
Franklin Mora	19	USA		
Joaquin Epifanio Jaen	2	Costa Rica		
Oriel A. Correa	31	México	2004	
Aristides Ananias Amaya	10	Costa Rica		Los Santos
Luis V. Villareal	12	Costa Rica	2005	LUS Cantos
G. Los Ángeles Abdiel Gonzáles	19	Costa Rica	2003	
Leonidas B.	2	Costa Rica	2006	
A.Sinclair/Tapia	6	USA		
Osvaldo Correa	1	USA	2009	
Marcos Zarzavilla Vergara	18	Mexico		
Inv. Para el Desarrollo de Coclé	39	Guatemala	2010	
Tomás Stanziola	10	USA	2002	Chiriquí
Carlos S. Castillo	14	Nicaragua	2002	
Sergio Anguizola Sagel	8	Costa Rica		
Jorge Troetch	8	USA	2003	
Carlos S. Castillo	50	USA	2000	
Tomas Sitton	20	USA		
La Yeguada	1	Costa Rica		
Marinun Van Keeken	1	Costa Rica		
Ganadera Saval/Ricardo Saval	8	Costa Rica		
Agro Carnes Nacionales	4	Costa Rica	2004	
Ganadera Carleida	7	Costa Rica	2007	
Gilberto Alvarez	2	México		
Tomàs Stanziola	30	México		
Tomàs Stanziola	2	Costa Rica		
Fredy Alpizar	5	Costa Rica	2006	
Agro. Carnes Nles	4	Costa Rica		

C. Arjona	6	Costa Rica	
Roberto Karica Vergara	4	Costa Rica	
Cecilia Montero Quesada	12	Costa Rica	
María C. Quesada	8	Costa Rica	
Iván Chávez Inclarte	17	Costa Rica	
María Montero Quesada	14	Costa Rica	
Luis Samudio Hernández	13	México	2009
Santa Rita Farm S.A.	17	Costa Rica	2008
María Montero Quesada	14	Costa Rica	
Ganadera C.R.F.	16	USA	
Carlos S. Castillo	15	USA	
Arturo Saldaña	17	USA	
Ganadera C.R.F.	18	USA	
Arturo Saldaña	11	USA	2000
Carlos S. Castillo	15	USA	2009
Carlos S. Castillo	1	Costa Rica	
Daniel de León	19	USA	
Wee Mingh Fung	13	USA	
Carlos S. Castillo	4	USA	2010
Palma Real Dairy S.A.	98	Costa Rica	
Daniel de León	1	Costa Rica	
	1653		-

\* Source: DECA

\*Data recorded until August 31<sup>st</sup>, 2010.

Province	Number of animals
Chiriquí	507
Herrera	24
Veraguas	228
Panamá	125
Los Santos	210
Coclé	550
Darien	2
Colòn	7
Total	1653

Source: DECA

\*Data recorded until August 31<sup>st</sup>, 2010.

On the Panamanian BSE dossier-2009, sent to the OIE on January 2010, was stated the following:

"The current location, of the cattle that were imported between 2002 and 2008, is detailed below (table 13). According to the official records, 813 animals had been imported during this period; however, information about the current location is only available for 792 animals. This small difference is mainly due to a lack of notification when animals die, as well as when they are sold to other farms."

The statement cited above, led the Veterinary Service of Panama to perform, through its epidemiological surveillance system, a strict tracking of all imported animals that enter the country during the surveillance period (2002-2010), to determine their location or destination, and to establish which of them died in that period. This information was extended until August 31<sup>st</sup> of 2010, and the result of this tracking, allows specifying the final destination of imported animals, which is shown in Table 13.

On the other hand, a larger difference is observed between the initial destination of these imported animals and their current location. This difference is explained by the fact that all animals are animals for reproduction, and these animals are moved frequently between different areas for the purpose of breeding

Country of origin	Year of birth	Year of import	Year of death	Death cause	Carcass disposal
USA	1999	2002	2002	Papillomatosis *	Buried
USA	1999	2002	2002	Papillomatosis *	Buried
USA	1999	2002	2002	Papillomatosis *	Buried
USA	2000	2002	2002	Papillomatosis *	Buried
USA	2000	2002	2002	Papillomatosis *	Buried
USA	2000	2002	2008	Hemoparasitosis	Scavenger birds
USA	2000	2002	2007**	Pneumonia	Buried
USA	2001	2002	2002	Traumatism*	Buried
USA	2001	2002	2004	Poisoning	Buried
USA	2001	2002	2004	Ofidic poisoning	Buried
USA	2001	2002	2005	Slaughtered for traumatism	Scavenger birds
USA	2001	2002	2008	Slaughtered for traumatism	Scavenger birds
USA	2001	2002	2008	Hemoparasitosis	Buried
USA	2001	2002	2008	Hemoparasitosis	Buried
USA	2001	2002	2007**	Pneumonia	Buried
USA	2001	2002	2007**	Pneumonia	Buried
USA	2001	2002	2007**	Pneumonia	Buried
USA	2001	2002	2007**	Pneumonia	Buried

Table 13. Imported bovines dead from 2020 to August 31<sup>st</sup>, 2010

USA	2001	2002	2007**	Pneumonia	Buried
USA	2001	2002	2007**	Pneumonia	Buried
USA	2001	2002	2007**	Pneumonia	Buried
USA	2001	2002	2007**	Pneumonia	Buried
USA	2001	2002	2007**	Pneumonia	Buried
USA	2001	2002	2007**	Pneumonia	Buried
USA	2001	2002	2007**	Pneumonia	Buried
USA	2001	2002	2007**	Pneumonia	Buried
USA	2001	2002	2007**	Pneumonia	Buried
USA	2001	2002	2007**	Pneumonia	Buried
USA	2001	2002	2007**	Pneumonia	Buried
USA	2001	2002	2007**	Pneumonia	Buried
USA	2001	2003	2003	Slaughtered for traumatism	Incinerated
USA	2001	2003	2003	Hemoparasitosis	Buried
USA	2001	2003	2003	Hemoparasitosis	Buried
USA	2001	2003	2003	Hemoparasitosis	Buried
USA	2001	2003	2003	Hemoparasitosis	Buried
USA	2001	2003	2003	Hemoparasitosis	Buried
USA	2001	2003	2003	Hemoparasitosis	Buried
USA	2001	2003	2003	Hemoparasitosis	Buried
USA	2001	2003	2003	Hemoparasitosis	Buried
USA	2001	2003	2003	Leucosis*	Incinerated
USA	2001	2003	2004	Abomasal torsion	Buried
USA	2001	2003	2005	Hemoparasitosis	Buried
USA	2001	2003	2005	Hemoparasitosis	Buried
USA	2001	2003	2009	Ofidic poisoning	Incinerated
USA	2001	2003	2009	Slaughtered for traumatism	Scavenger birds
USA	2001	2003	2009	Ofidic poisoning	Buried
-----	------	------	--------	--------------------------------	----------------
USA	2001	2003	2007**	Pneumonia	Buried
USA	2001	2003	2007**	Pneumonia	Buried
USA	2002	2003	2003	Slaughtered for traumatism	Buried
USA	2002	2003	2003	Hemoparasitosis	Buried
USA	2002	2003	2003	Slaughtered for traumatism	Buried
USA	2002	2003	2004	Hemoparasitosis	Incinerated
USA	2002	2003	2005	Hemoparasitosis	Buried
USA	2002	2003	2005	Slaughtered for infertility	Buried
USA	2002	2003	2006	Death by drowning	Buried
USA	2002	2003	2006	Slaughtered for infertility	Slaughterhouse
USA	2002	2003	2007	Hemoparasitosis	Buried
USA	2002	2003	2009	Hemoparasitosis	Buried
USA	2002	2003	2009	Hemoparasitosis	Buried
USA	2002	2003	2009	Death by drowning	Buried
USA	2002	2003	2009	Hemoparasitosis	Buried
USA	2002	2003	2009	Slaughtered for infertility	Slaughterhouse
USA	2002	2003	2009	Slaughtered for Politraumatism	Buried
USA	2002	2003	2009	Slaughtered for infertility	Slaughterhouse
USA	2002	2003	2007**	Pneumonia	Buried
USA	2002	2003	2007**	Pneumonia	Buried
USA	2002	2003	2007**	Pneumonia	Buried
USA	2002	2003	2007**	Pneumonia	Buried
USA	2002	2003	2007**	Pneumonia	Buried
USA	2002	2003	2007**	Pneumonia	Buried
USA	2002	2003	2007**	Pneumonia	Buried
USA	2002	2003	2007**	Pneumonia	Buried

USA	2002	2003	2007**	Pneumonia	Buried
USA	2002	2003	2007**	Pneumonia	Buried
USA	2002	2003	2007**	Pneumonia	Buried
USA	2002	2003	2007**	Pneumonia	Buried
USA	2002	2003	2007**	Pneumonia	Buried
USA	2002	2003	2007**	Hemoparasitosis	Buried
USA	2003	2003	2003	Slaughtered for traumatism	Buried
USA	2003	2003	2003	Slaughtered for traumatism	Buried
USA	2003	2003	2003	Hemoparasitosis	Buried
USA	2003	2003	2007	Slaughtered for infertility	Slaughterhouse
USA	2002	2003	2009	Slaughtered for uterine prolapse.	Slaughterhouse
USA	2004	2008	2009	Timpanism	Buried
USA	2005	2008	2008	Hemoparasitosis	Incinerated
USA	2005	2008	2008	Hemoparasitosis	Buried
USA	2006	2008	2008	Leucosis*	Buried
USA	2006	2008	2010	Clostridiosis	Incinerated
USA	2007	2008	2008	Hemoparasitosis	Incinerated
USA	2007	2008	2008	Hemoparasitosis	Buried
USA	2007	2008	2008	Hemoparasitosis	Buried
USA	2007	2008	2009	Hemoparasitosis	Buried
USA	2007	2008	2009	Slaughtered for infertility	Slaughterhouse
USA	2007	2009	2009	Hemoparasitosis	Incinerated
USA	2007	2009	2009	Clostridiosis*	Incinerated
USA	2007	2009	2009	Corinebacteriosis*	Incinerated
USA	2007	2009	2009	Slaughtered for traumatism during transport*	Incinerated
USA	2007	2009	2009	Slaughtered for politraumatism	Buried
USA	2007	2009	2009	Slaughtered for politraumatism	Buried

USA	2008	2009	2009	Hemoparasitosis	Incinerated
USA	2008	2009	2009	Hemoparasitosis	Incinerated
USA	2008	2009	2009	Hemoparasitosis	Incinerated
USA	2008	2009	2009	Slaughtered for politraumatism	Incinerated
USA	2008	2009	2009	Slaughtered for politraumatism	Incinerated
USA	2008	2009	2010	Hemoparasitosis	Buried
USA	2008	2009	2010	Hemoparasitosis	Buried
USA	2008	2009	2010	Hemoparasitosis	Incinerated
USA	2008	2009	2010	Hemoparasitosis	Incinerated
USA	2009	2010	2010	Hemoparasitosis	Buried
USA	2009	2010	2010	Hemoparasitosis	Incinerated
USA	2002	2003	2009	Slaughtered for traumatism	Incinerated
USA	2001	2003	2010	Slaughtered for infertility	Slaughterhouse
Costa Rica	2002	2004	2007	Slaughtered for infertility	Slaughterhouse
Costa Rica	2002	2004	2007	Slaughtered for politraumatism	Buried
Costa Rica	2003	2005	2008	Slaughtered for politraumatism	Scavenger birds
Costa Rica	2004	2005	2008	Slaughtered for infertility	Slaughterhouse
Costa Rica	2004	2005	2009	Slaughtered for infertility	Slaughterhouse
Costa Rica	2002	2005	2009	Slaughtered for politraumatism	Scavenger birds
Costa Rica	2006	2008	2008	Hemoparasitosis	Buried
Costa Rica	2008	2008	2009	Hemoparasitosis	Buried
Costa Rica	2004	2008	2009	Hemoparasitosis	Buried
Costa Rica	2006	2008	2009	Hemoparasitosis	Buried
Costa Rica	2009	2010	2010	Hemoparasitosis	Buried
Guatemala	2008	2009	2010	Hemoparasitosis	Buried
Guatemala	2008	2009	2010	Pneumonia	Buried
Guatemala	2008	2010	2010	Hemoparasitosis	Buried
Guatemala	2008	2010	2010	Hemoparasitosis	Buried
Guatemala	2009	2010	2010	Hemoparasitosis	Buried
Mexico	2002	2003	2006	Slaughtered for traumatism	Slaughterhouse
Mexico	2002	2004	2005	Hemoparasitosis	Buried
Mexico	2002	2004	2008	Slaughtered for infertility	Slaughterhouse

Mexico	2001	2004	2008	Slaughtered for traumatism	Scavenger birds
Mexico	2002	2004	2010	Slaughtered for traumatism	Scavenger birds
México	2003	2004	2008	Slaughtered for traumatism	Scavenger birds
México	2004	2004	2008	Slaughtered for politraumatism	Scavenger birds
México	2002	2004	2008	Slaughtered for traumatism	Buried
Mexico	2006	2009	2010	Slaughtered for traumatism	Buried
Mexico	2007	2009	2010	Death by dystocia	Scavenger birds
Mexico	2007	2009	2010	Slaughtered for infertility	Slaughterhouse
Mexico	2009	2010	2010	Slaughtered for traumatism	Buried

Source: DINASA and DECA \* Animals sacrificed at the quarantine station due to failures related to import requirements. \*\* Animals that were part of more than 1,000 animals affected by an unusual cold wave that hit the country between August and October 2007.

From all the countries mentioned in the above table (13), USA is the only one that has reported an indigenous case of the disease, so the following table (14), describes, in greater detail, the geo-referenced of destiny farms for all animals imported from this country, during the surveillance period (2002-2010), which 112 have died to date (see Table 13).

Importer/Owner	Number of animals	Country of origin	Year of entry	Port of entry	Destination/ province	RUA*	Vertical	Horizontal
Hermes Rodríguez	13	USA	2002	Tocumen Airport	Veraguas	905030426	450933	891786
OPM Enterprises	10	USA	2002	Tocumen Airport	Chiriquí	406010373	350585	944364
Franklin Mora	22	USA	2002	Tocumen Airport	Los Santos	702010987	578800	860100
Hermes Rodriguez	8	USA	2002	Tocumen Airport	Veraguas	905030426	450933	891786
Alexis Sinclair	28	USA	2003	Tocumen Airport	Los Santos	707041595	551410	822031
Aquiles Espino	2	USA	2003	Tocumen Airport	Herrera	604050521	551245	912617
Luis Garuz	6	USA	2003	Tocumen Airport	Panamá	804020069	625241	950295
Jorge Troestch	8	USA	2003	Tocumen Airport	Chiriquí	405091080	312726	946811
Carlos S. Castillo	50	USA	2003	Tocumen Airport	Chiriquí	413010125	416270	911612
Tomas Sitton	20	USA	2003	Tocumen Airport	Chiriquí	406060400	354116	933825
Aquiles Espino	22	USA	2003	Tocumen Airport	Herrera	604050521	551245	912617
Hacienda Cenegal	15	USA	2003	Tocumen Airport	Veraguas	911010399	464782	886405
Franklin Mora	19	USA	2003	Tocumen Airport	Los Santos	702010987	578800	860100
Rocco Melillo	11	USA	2003	Tocumen Airport	Panamá	804070200	615050	946924
Eduardo Urriola	10	USA	2003	Tocumen Airport	Panamá	803100450	619372	967602
Gabriel A. Duque	15	USA	2003	Tocumen Airport	Panamá	805010002	711481	1011974
Ganadera Martinelli	26	USA	2003	Tocumen Airport	Veraguas	911060097	469709	856247
Leonel Chang ( Panama )	1	USA	2003	Chiriqui - Paso Canoas	Veraguas	901011710	505143	894141
Ramon Cedeño (RMC)	7	USA	2008	Tocumen Airport	Coclé	205050522	542873	938598
Grupo Altamirano	17	USA	2008	Tocumen Airport	Panamá	805010002	711481	1011974
Guido Martinelli	7	USA	2008	Tocumen Airport	Veraguas	911010399	464747	886605
Inv. Desarrollo de Coclé (INDECO S.A.)	12	USA	2008	Tocumen Airport	Coclé	202031458	585885	930285
Ganadera Karla Mary	15	USA	2008	Tocumen Airport	Coclé	201020294	543116	913294
Centro Genetico Ganadero	3	USA	2008	Tocumen Airport	Veraguas	912040045	514631	820999
Arturo Saldaña	17	USA	2008	Tocumen Airport	Chiriquí	411010061	405988	909493
Juan Miguel Clark	36	USA	2008	Tocumen Airport	Panamá	808170541	674821	1013670
Ganadera C.R.F.	16	USA	2008	Tocumen Airport	Chiriquí	404040191	341119	958073
Carlos S. Castillo	15	USA	2008	Tocumen Airport	Chiriquí	413010125	416270	911612

Table 14: Bovines Imported from USA, during the Surveillance Period 2002-2010

Ganadera Karla Mary	16	USA	2009	Tocumen Airport	Coclé	201020294	543116	913294
Alexis Sinclair	23	USA	2009	Tocumen Airport	Los Santos	707041595	551410	822031
Ganadera C.R.F.	18	USA	2009	Tocumen Airport	Chiriquí	404040191	341119	958073
Hacienda Multiganadera	35	USA	2009	Tocumen Airport	Coclé	206050027	573434	931321
Hacienda Hermacor	7	USA	2009	Tocumen Airport	Colón 3020100		602306	1023405
Rancho Santa Marta	7	USA	2009	Tocumen Airport	Coclé	202010472	578287	928943
Ganadera Karla Mary	23	USA	2009	Tocumen Airport	Coclé	201020294	543116	913294
Osvaldo Correa	1	USA	2009	Tocumen Airport	Los Santos	703110296	568349	874261
Ganadera Estefano	16	USA	2009	Tocumen Airport	Veraguas	910070253	503401	904978
Hacienda Cenegal	12	USA	2009	Tocumen Airport	Veraguas	911090841	468340	856816
Arturo Saldaña	11	USA	2009	Tocumen Airport	Chiriquí	411010061	405988	909493
Jaime Chen	5	USA	2009	Tocumen Airport	Veraguas	905010598	450407	898858
Carlos S. Castillo	15	USA	2009	Tocumen Airport	Chiriquí	413010125	416270	911612
Daniel De León	19	USA	2010	Tocumen Airport	Chiriquí	408010039	350039	938510
William Deterine	3	USA	2010	Tocumen Airport	Panamá	805020006	731929	1020199
Ganadera Karla Mary	35	USA	2010	Tocumen Airport	Coclé	201020294	543116	913294
José Victor Urrutia	3	USA	2010	Tocumen Airport	Panamá	807160483	632905	973402
Wee Ming Fung	13	USA	2010	Tocumen Airport	Chiriquí	406030176	336321	928973
Aurelio Escalona	3	USA	2010	Tocumen Airport	Coclé	204010486	551889	926488
Carlos S. Castillo	4	USA	2010	Tocumen Airport	Chiriquí	413010125	416270	911612
TOTAL	700							

Source: DINASA and DECA \*RUA: farm code

The following table shows on a consolidated basis, all information pertaining to animals imported, per year of import and country of origin, including their current status.

Table 15. Summary of imported animals, per year, country and current situation until August 31<sup>st</sup>, 2010.

Year of Country of importation Origin		animals		Death						
		imported	Live	Buried	Incinerated	Scavenger birds	Salughterhouses	Total		
	USA	53	23	27	0	3	0	30		
2002	Nicaragua	14	14	0	0	0	0	0		
	Mexico	34	34	0	0	0	0	0		
	USA	233	178	42	6	1	6	55		
2002	Costa Rica	9	9	0	0	0	0	0		
2003	Nicaragua	10	10	0	0	0	0	0		
	Mexico	1	0	0	0	0	1	1		

2004	Costa Rica	38	36	1	0	0	1	2
2004	Mexico	78	71	2	0	4	1	7
2005	Costa Rica	36	32	0	0	2	2	4
2006	Costa Rica	33	33	0	0	0	0	0
2000	Nicaragua	11	11	0	0	0	0	0
	USA	145	135	6	3	0	1	10
2008	Costa Rica	105	101	4	0	0	0	4
	Mexico	13	13	0	0	0	0	0
	USA	189	174	4	11	0	0	15
2000	Costa Rica	8	8	0	0	0	0	0
2009	Mexico	110	107	1	0	1	1	3
	Guatemala	106	104	2	0	0	0	2
	USA	80	78	1	1	0	0	2
2010	Costa Rica	99	98	1	0	0	0	1
2010	Mexico	165	164	1	0	0	0	1
	Guatemala	83	80	3	0	0	0	3
	•	1,653	1,513	95	21	11	13	140

Source: DINASA and DECA

Before the entry, into force, of Decree 383 of September 27<sup>th</sup>-2010, DINASA relied on the information of individual animal records, collected by the time of entry into the quarantine station, in which, all imported animals are sampled for laboratory analysis, in compliance with the import requirements described in section 3.2.1 of this report.

This information was really useful to be distributed to the field veterinarians, starting on January of the present year, in order to strengthen epidemiological surveillance for BSE in imported animals, especially those coming from the United States of America, taking into consideration that this is the only country from where Panama has permitted the importation of live animals, that has reported one positive indigenous BSE case.

The aforementioned measure, allowed DINASA's officials make the farm georeference, and locate all imported animals of that country. In addition, this measure provided more control on all imported animals over the whole territory, which also operated as a starting point in differentiating between imported and domestic animals.

It is important to highlight, as it has been indicated in previous lines, that after the recognition of Panama as a Controlled Risk country for BSE by the OIE, the procedures for the importation of live animals have been updated, supported by Executive Decree 383, 2010, which states in Article 30 that all ruminant entering the country, will receive from the time of admission a registration number, which will become thereafter, its sanitary identification number. It is important to keep in mind that the only authorized use for imported animals will be reproduction, in compliance with DINASA regulations.

The slaughter of imported animals will be controlled by an official veterinarian, and the animal owner must notify in advance, to the nearest MIDA agency (fifteen (15) days), the exact date in which the animal will be slaughtered, for its supervision, relevant communication and sampling for laboratory analysis of BSE. Samples are sent to the laboratory and recorded as samples from imported cattle.

In case of death on the farm, or during transport, the animal owner shall immediately notify the DINASA veterinarian, for issuing the certification of death, taking samples for laboratory analysis of BSE, and controlling of the body destruction, to ensure that these animals do not enter the human or animal food chain. Failure to comply with the provisions of this Article, shall result in the imposition of the penalties provided for by Act 23 of 1997, and its amended.

This regulation and procedure manuals ensure that all imported cattle is sampled and tested for BSE, when slaughtered or died for other reasons.

As stated above, we can infer that the information provided by the official veterinary service, in accordance with the provisions of Executive Decree 383 of 2010, allowed applying a purposely biased sampling procedure, to differentiate between domestic and imported animals.

# 4.1.3. Documentation describing the definition and disposal of specified risk material, if any.

Panama has a national epidemiological monitoring and surveillance system with a team of 85 field veterinarians and 65 paraveterinarians, distributed over the 75 local agencies of the MIDA.

These professionals conduct active and passive monitoring and surveillance activities, and they send their reports daily to the Department of Epidemiology of the DINASA for their processing, analysis and decision making.

These monitoring and surveillance activities are offered to the producers without any costs. Because the contact with the veterinarians is already established, farmers also seek technical assistance for dealing with other diseases that are not included in the official programs for prevention, control and eradication of the DINASA.

This monitoring and surveillance system was evaluated by a team of experts of the EFSA, who carried out an audit in 2005, and classified Panama as a GBR 1 country, or a country with a negligible BSE risk.

In the absence of a specific national rule laying down the elements of the BSE monitoring then, the International Norm was adopted, according to what was stipulated in Act 23 of 1997.

Later and given the importance of the subject, issued Executive Decree 383, September 27, 2010 "Whereby adopting the regulations for the epidemiological surveillance of bovine spongiform encephalopathy (BSE) and other Transmissible Spongiform Encephalopathies (TSE's) "which states in Article 8, the creation in the DINASA, the National Program of Epidemiological Surveillance of BSE and other Transmissible Spongiform Encephalopathies (TSE's), known as PRONEET.

The National Program of Epidemiological Surveillance of the Bovine Spongiform Encephalopathy (BSE) and of other Transmissible Spongiform Encephalopathies (TSE) (PRONEET) includes the following elements:

Records System and access to the information

Official laboratories and of international reference recognized for the diagnosis of Bovine Spongiform Encephalopathy (BSE) and other Transmissible Spongiform Encephalopathies (TSE's).

Emergency Plan (SINESA)

Awareness and training Strategy

Control Program of animal consumption food.

This Executive Decree gives official status to the surveillance activities, which have been made, both in field and in slaughterhouses, with respect to this disease.

To establish a definition of MER, the guidelines issued by the Health Code of the OIE Terrestrial Animal Specific Risk Material was adopted, wich is regulated in Article 7 which states that it understands as Specific Risk Material (SRM) the parts of the animal recognized as such in the Health Code for the Terrestrial Animals of the World Animal Health Organization (OIE). The National Directorate of Animal Health (DINASA) will publish and maintain updated such list, as well as the procedures of infectious reduction, established by the Health Code for the Terrestrial Animals of the Worldwide Animal Health Organization (OIE) for communication purposes.

In the same way establishes that will not be allowed the use of Specific Risk Material (SRM) for the product elaboration or ingredients oriented to the human consumption, animal feeding, preparation of fertilizers, cosmetic products, pharmacists and biological or medical material.

This regulation was issued taking into consideration the current categorization of Panama as a Controlled Risk country, however as far as that qualification is enhanced amendment shall be as provided in Chapter 11.5 of the OIE, Health Code for Terrestrial Animals.

As for the removal and disposal of specified risk material (SRM), the Executive Decree 383 of 2010, states in Article 20 that all slaughterhouses will extract, identify and eliminate the Specific Risk Materials (SRM), under the supervision of the official inspection services of the Food Protection Department (DEPA) of the Health Ministry. The separation of the muscular tissue of the head bones and spine, will not be able to be performed by mechanic methods or by using high pressure.

The slaughterhouses shall elaborate and implement documented procedures for the extraction and elimination of the Specific Risk Materials (SRM), and to avoid the contamination of other products.

In accordance with previous statement, the Specific Risk Materials (SRM's) shall be under the custody of the medical veterinarian physicians of the Official Service of the Food Protection Department (DEPA), who should verify and record its destruction under to the established procedures by the Health Code for the Terrestrial Animals of the World Animal Health Organization (OIE).

In line with the above, we can state that is very unlikely that SRM's, represent a risk of exposure to the cattle population of Panama to the causal agent of BSE.

## 4.1.4 Documentation describing the rendering process and parameters used to produce meat-and-bone meal and greaves.

The Department of Registry and Accreditation of the DINASA (Law 23 of 1997), is the responsible organization for the monitoring of the rendering plants at national level.

At this moment, there are 11 rendering plants in Panama (5 process materials of ruminant origin, 4 process materials of poultry origin, 1 process materials of ruminant and poultry origin, 1 process materials of fish) Five plants that process materials of ruminant are located on the same premises as the slaughterhouses.

The 5 plants that process materials of poultry origin have their facilities located in other areas, not attached to a slaughterhouse.

For the production of MBM, these rendering plants apply the recommendations described in chapter 11.6 of the OIE Terrestrial Animal Health Code (Article 21, Executive Decree 383 de 2010).

Below, detailed information about the rendering plants using materials of ruminant origin is presented by province, type of processed material, amount, destination of the final product and use of the final product by species (Table 16).

Name of the plant/establishment	Province	Type of processed material	Production per year, in tons	Destination	Use for species
Macello, S. A.	Panamá	Bones and material not fit for human consumption	6000	National	feed for poultry and pigs
Servicarne S. A	Herrera	Bones and material not fit for human consumption	5400	National	feed for poultry and pigs
Carnes de Coclé	Los Santos	Bones and material not fit for human consumption	2592	National	feed for poultry and pigs
Machisa, S.A	Machisa, S.A Chiriquí not fit for human consumption		1278	Export to Costa Rica	Only for export
Agrocárnica Industrial S.A	Veraguas	Bones and material not fit for human consumption	900	National	feed for pigs
Hacienda El Rodeo	Veraguas	Bones and material not fit for human consumption	500	National	Feed for poultry and pigs

Table 16. Rendering plants, location, amount and type of material processed in Panama

Source: DINASA/Register and Accreditation Department

In addition to the above and considering that from May 2010, Panama was recognized by the OIE as a Controlled Risk country for BSE, have been updated procedures for the manufacture of animal feed, supported by Executive Order 383 September 27, 2010, "Whereby adopting the regulations for the epidemiological surveillance of bovine spongiform encephalopathy (BSE) and other Transmissible Spongiform Encephalopathies (TSE's )," which establishes Control Program Production and supervision of feed, for the prevention and control of BSE and other TSE's, which will be developed and implemented by the DINASA, through the Department of Registration and Accreditation and in coordination with the National Standards for Importing AUPSA foods, in the case of imported food and raw materials.

The control program of the feed production is responsible for establishing procedures for inspection and control of food for ruminants and other animals whose products and waste can create a risk of transmission of the causative agent of BSE and other TSE's.

Regarding inspections, Article 27 states that in application of Title First of the Act 23 of 1997, the official personnel or authorized by the National Directorate of Animal Health (DINASA) will be able to access at any time to the records, commercial documents and sanitary certificates of the production and sacrifice plants, and to the transformation and elaboration plants of bovine origin products or feed, as well as

distribution centers, with the objective of inspecting the animals and products, take samples, pictures, request copies of the records, and necessary documents for the compliance of the objectives of the National Program of Epidemiological Surveillance of the Bovine Spongiform Encephalopathy (BSE) and of other Transmissible Spongiform Encephalopathies (TSE) (PRONEET).

The inspections of these rendering plants are part of the annual work plan of the DINASA, which is executed by each of the Regional Coordination Offices for Animal Health. The different establishments are visited periodically by representatives of the Regional Coordination Offices and supervision is conducted by the central level of the DINASA.

During each visit, the inspector must fill out an Inspection Form, which contains general information about the plant, its condition, as well as any non-conformities or findings detected.

Following the visit, the company or plant is informed about any non-conformities or faults that were detected, and recommendations are made on measures to resolve the problems. These measures are written down in an Act of Commitment, in which also a time frame for implementation and completion of these measures is determined.

# 4.1.5. Documentation describing methods of animal feed production, including details of ingredients used, the extent of use of meat-and-bone meal in any livestock feed, and measures that prevent crosscontamination of cattle feed with ingredients used in monogastric feed.

The responsibility for the monitoring of feed mills, at national level, lies with the Department of Registry and Accreditation of the DINASA.

Feed mills that export their products to the Republic of Panama, should be located in eligible countries and must be approved by the AUPSA, as established by Resolution 002-2010, "Through which the AUPSA adopted as the equivalent risk categorization made by the OIE for recognition of member countries related to BSE," in accordance with Resolution 116-2009, December 31, 2009, which basically requires the following: - For controlled risk countries, recognizes the risk analysis of the OIE and is complemented by a site visit to the processing plant, in order to verify compliance with Chapter 11.5 the OIE of related to BSE. - For indeterminate risk countries, conduct a full risk analysis in order to verify compliance with Chapter 11.5 of the OIE related to BSE.

In Panama, there are 37 feed mills for the elaboration of feedstuffs for bovines, horses, pigs, poultry, fish and shrimps. These plants are located in the provinces of Panama, Chiriquí, Coclé, Herrera, Santos and Veraguas. Of these plants, 37 produce multispecies feedstuffs and 10 produce feed for only one species (poultry or pigs).

For the production of feed for bovines, meat and bone meal is not used (either from national production or imported), because it is prohibited as established in Resolution 045 of 2001 replaced by Executive Decree 383, September 27, 2010.

The process of feed production starts with the reception of the national and international raw material (corn, sorghum, soybeans among others). Before unloading of the transport, the raw materials are inspected by the Department of Quality Control of the feed mill to check if the materials meet the quality standards for further processing.

Once they have been inspected, the raw materials are stored under appropriate conditions. The raw materials remain identifiable with respect to their content during all the stages of the process, and remain separated of the processed materials to avoid cross-contamination.

During the production process, the movement of personnel or materials that are not part of the production process is prohibited in the production area to avoid crosscontamination. Between batches, a flushing batch is produced to clean the production line. Finally, feed for different species is produced in a specific order with the aim of avoiding cross-contamination.

The percentages of MBM that are included in the different feedstuffs for pigs, poultry and horses remain confidential under the intellectual property rights of the manufacturers, therefore we do not have exact details on the percentages used.

In relation to the processing of raw materials, shall apply the provisions of paragraph 2, Article 24 of Executive Decree 383 of 2010, which regulates matters relating to the use of meat and bone meal (MBM) in ruminant animals, noting that production plants that use animal feed ruminant MBM must establish separate production lines for food and non-ruminant MBM.

In addition to the above, it is important to note that dead animals on farms or during transportation, domestic or imported, do not enter the food chain, human or animal (Decree 62 of 1957). Most are buried or burned and in some cases they are consumed by scavenging birds (vultures) and other predators. See Table 13 related to the imported animals.

# 4.1.6. Documentation describing the end use of imported cattle products and the disposal of waste.

This point is widely discussed in 4.1.1, 4.1.2 and 4.1.3 of this report.

In the case of imported cuts of bovine meat with bones, they enter directly to retail centers or restaurants. The imported pharmaceuticals and cosmetics were all ready to use.

#### 4.1.7. Documentation describing monitoring and enforcement of the above.

The information about monitoring and compliance with regulations for rendering and feed production has been provided in the chapters above.

#### Conclusion of chapter 4.1:

The system of slaughter and rendering in Panama provides several processes and practices to avoid and prevent the entrance of SRMs in the bovine feed chain.

Panama has been classified as a GBR category 1, or negligible risk, country in 2005 by the EFSA. Also, the monitoring and surveillance system for BSE has continued

until today. The surveillance system for this disease has continued uninterrupted, the MER's will be removed and destroyed under the provisions contained in Executive Decree 383, September 27, 2010.

The slaughter waste of the small or local slaughterhouses is discarded on the municipal garbage dumps and they are not sent to the rendering plants.

The high genetic and economic value of the imported cattle results in long periods of productive life. Imported cattle are usually very old at the time of slaughter; therefore, this contributes to the official monitoring and surveillance system in detecting imported animals that are displaying clinical signs compatible with BSE, while they are still on the farm.

According to the above, we can state that it is very unlikely that there is a risk that imported animal (alive or deceased) or the MER's, represent a source of exposure to the cattle population of Panama, to the causative agent of BSE.

# 4.2 The potential for the exposure of cattle to the BSE agent through consumption of meat-and-bone meal or greaves of bovine origin

# 4.2.1 Documentation describing the use of imported meat-and-bone meal and greaves, including the feeding of any animal species.

Panama does not import, nor use MBM, or greaves for bovine feed. The only feed containing MBM that is imported is pet food for dogs and cats. Pet food is imported pre-packed and ready to use and it is delivered directly to the distributors and consumers.

In addition to this and considering that from May 2010, Panama was recognized by the OIE as a Controlled Risk country for BSE, have been updated procedures for imports of feed containing MBM, based on article 25 of Executive Decree 383 of September 27, 2010, "Whereby adopting the regulations for the epidemiological surveillance of bovine spongiform encephalopathy (BSE) and other Transmissible Spongiform Encephalopathies (TSE's )," which states that animal feed produced with MBM from ruminant animals, must be includes in the labeling, in a clear and visible way, the legend:

#### "DO NOT USE FOR FEEDING BOVINES OR OTHER RUMINANTS".

The DINASA will be able to establish additional labeling requirements according to the guidelines issue by the international entities in reference, such as include pictographs in its containers.

More details are presented in the table in chapter 3.1.

# 4.2.2 Documentation describing the use made of meat-and-bone meal and greaves produced from domestic cattle, including the feeding of any animal species.

Panama don't use MBM of ruminant origin in cattle feed, in compliance with Resolution 045, 2001 replaced by Executive Decree 383 of September 27, 2010.

In Panama, 16,670 tons of MBM are produced annually, of which 1,278 tons are destined for export. The remaining MBM is used for the production of feed for poultry and pigs.

The companies MACHISA, S.A. and MACELLO S.A., are the only two company that processes and exports MBM to the Republic of Costa Rica.

In 2009, the company Nutrición Animal S.A. has started with the production of pet food (only dogs) destined for export. The used MBM is obtained from national rendering plants. This company employs a veterinarian to verify compliance with good production practices.

The following table presents the annual production of feed for the different species.

Table 17. Production of feed for ruminants, pigs, poultry and other species, 2002-2009 (in tons)

SPECIES	2002	2003	2004	2005	2006	2007	2008	2009	2010	TOTAL
RUMINANT	32933	33561	34627	45851	49152	52533	54322	59504	61430	1239133
PIGS	40481	46531	53733	59511	68857	91378	114394	113749	126304	588634
POULTRY	245546	291150	331599	384754	485649	588947	661627	683194	700413	4372879
OTHERS	17003	20328	15769	11241	164916	165779	136353	93799	98823	724011
Total	335963	391570	435728	501357	768574	898637	966696	950246	986970	6235741

Source DINASA

Panama also produces feed for fish and shrimps. These feed mills do not use MBM of ruminant origin. The following table (Table 18) provides details about the production of feed for shrimps and fish, produced in 2009-2010.

 Table 18. National feed production for shrimps and fish in 2009-2010

NATIONAL COMPANY	TOTAL	SHRIMP	FISH
Industrias de Natá, S.A. (INASA)	8,420 ton	7,600 ton	820 ton
Nutrición Animal, S.A. (NASA)	3,800 ton	3,420 ton	380 ton
Avícola Grecia, S.A.	7,968 ton	7,968 ton	0

Source: DINASA

# 4.2.3 Documentation on the measures taken to control cross-contamination of cattle feedstuffs with the meat-and-bone meal and greaves including the risk of cross-contamination during production, transport, storage and feeding.

Panama does not use greaves, nor meat, and bone meal in the preparation of bovine feed.

The DINASA, through the Department of Registry and Accreditation, establishes the guidelines for the production of animal feed. Amongst other, these guidelines are meant to prevent cross-contamination. The feed mills are inspected periodically, to ensure that they comply with the norms and standards established in the guidelines.

In feed mills where feed for several species is produced, different weekdays are allocated for the production of feed for different species. After the production of one type of feed, the machines are cleaned. The final products are stored in different deposits, separated from the other final products.

Upon recognition of Panama as a controlled risk country for BSE by the OIE in May 2010, procedures have been updated, to avoid cross contamination, related to the processing of raw materials, which will apply as provided in paragraph 2, Article 24 of Executive Decree 383 of 2010, which regulates matters relating to the use of meat and bone meal (MBM) in non ruminant animals, noting that feed mills that use animal MBM ruminants must establish separate production lines for feed with and non-ruminant MBM.

DINASA is conducting regular sampling of feed at different levels, including at the deposits of the feed mills, in the distribution and retail centers, and on the farms. These samples are collected to determine the presence of protein of animal origin in the feed and to make sure that cross-contamination does not take place.

As regards the procedures to avoid cross-contamination in transportation, storage and distribution of animal feed, Article 26 of Executive Decree 383 of 2010, notes that the DINASA shall develop and approve measures for the transport, storage, and distribution of sealed animal feed in order to avoid cross-contamination of animal feed and other substances used in animal production.

#### 4.2.4. Inspections

# 4.2.4.1. Documentation, in the form of the following table, on the audit findings in rendering plants and feed mills processing ruminant material or mixed species containing ruminant material, related to the prohibition of the feeding to ruminants of meat-and-bone meal and greaves.

Year (Information should be provided for each of the 8 years for effectivenes s is calimed	Type of plant (renderer or feed mill)	Number of plants processing ruminant material	Number of plants in (A) inspecte d	Total number of visual inspectio ns in (B)	Total numbers of plant in (B) with infractions	Total number of inspected plants in (B) with samplig	Total number of plants in (C) with positive test results
		(A)	(B)			(C)	
2003	Renderer	6	1	1	1	0	0
	Feed Mills	33	3	3	0	0	0
2004	Renderer	6	1	1	0	0	0
	Feed Mills	33	0	0	0	0	0
2005	Renderer	5	0	0	0	0	0
	Feed Mills	33	0	0	0	0	0

2006	Renderer	5	0	0	0	0	0
	Feed Mills	33	0	0	0	0	0
2007	Renderer	5	1	1	1	0	0
	Feed Mills	33	0	0	0	0	0
2008	Renderer	5	2	2	0	0	0
	Feed Mills	33	0	0	0	0	0
2009	Renderer	6	5	5	4	0	0
	Feed Mills	34*	6	6	1	0	0
2010	Renderer	6	6	6	6	0	0
	Feed Mills	16	11	11	11	11 ***	1 ****

Observations: 2003 a 2005 samples was not conducted

+ One inspection per plant.
+ One inspection per plant.
\*: In the information sent to 2009, did not make a difference between processing plants for cattle and other species.
That is why the corresponding information for 2010 reflects only 16 feed mills, which are in fact engaged in such activity

\*\*\*\*Plants with feed samples to detect MBM \*\*\*\* This plant has a positive sample to MBM (cross contamination) but decided to eliminate the production line for bovines feed, before the final laboratory analysis has been given.

#### 4.2.4.2. Documentation, in the form of the following table, on the audit findings in rendering plants and feed mills processing non-ruminant material, related to the prohibition of the feeding of meat-and-bone meal and greaves to ruminants.

Year (Information should be provided for each of the 8 years for effectivenes s is calimed	Type of plant (renderer or feed mill)	Number of plants processing ruminant material	Number of plants in (A) inspecte d	Total number of visual inspectio ns in (B)	Total numbers of plant in (B) with infractions	Total number of inspected plants in (B) with samplig	Total number of plants in (C ) with positive test results
		(A)	(B)			(C)	
Año 2003	Renderer	2	2	2	1	0	0
	Feed Mills	33	2	2	1	0	0
Año 2004	Renderer	2	2	2	1	0	0
	Feed Mills	33	3	3	0	0	0
Año 2005	Renderer	2	2	2	1	0	0
	Feed Mills	24	1	1	0	0	0
Año 2006	Renderer	2	1	1	0	0	0
	Feed Mills	24	0	0	0	0	0
			-	-			
Año 2007	Renderer	2	2	2	1	0	0
	Feed Mills	24	6	6	0	0	0
Año 2008	Renderer	2	1	1	0	0	0
	Feed Mills	24	1	1	0	0	0
Año 2009	Renderer	2	2	2	1	0	0
	Feed Mills	24	7	7	0	0	0
Año 2010	Renderer	5	5	5	5	0	0
	Feed Mills	31	7	7	7	7	0

Observations: 2003 to 2005 no samples were taken

#### 4.2.5. Infractions

# 4.2.5.1. Documentation, in the form of the following table, on each plant above processing ruminant material or mixed species containing ruminant material with infractions, specifying the type of infraction and the method of resolution.

Year (Information	Type of plant (renderer or	Plant ID	Nature of infraction	Method of resolution	Follow up results
should be provided for	feed mill)				
effectiveness is					
claimed)					
2003	Renderer	DAVAR S.A.	1-Raw material from one day to another without processing 2- inadequate installations for the processing 3- Too old equipment 4-A smell was escaping from the cooker 5- lack of hygiene in the plant	Written recommendations were given and an agreement was signed to correct the errors.	The plant shut down operations
2004					
2005					
2006					
2007	Renderer	Macello, S.A.	1- Incomplete documentation of applied parameters for temperature and pressure, 2- Floors in bad condition, 3- scrap iron lying around outside, 4- Product without official registry	Written recommendations were given and an agreement was signed to correct the errors	The plant complies with the requirements
2008					
2009	Renderer	Carnes de Coclè, S.A.	I- Deteriorated walls and floors 2- It does not have gauges to measure temperature 3- The pressure gauge is installed in inadequate place 4 - it does not register temperature and pressure of the cooker 5- The final product does not have any labelling on the bags 6 - Inadequate system of registration of all processes 7- In general they do not use good manufacturing practices	Written recommendations were given and an agreement was signed to correct the errors	Waiting for a new inspection.
		SERVICARNES, S.A.	1- Processing equipment in very bad condition, 2 – no temperature and pressure gauges in cooker, total absence of documentation of cooking cleaning	Written recommendations were given and an agreement was signed to correct the errors	Waiting for a new inspection.

	AGROCARNICA INDUSTRIAL, S.A.	and desinfection, 3 - does not have manuals of procedures 4 - total absence in the use of a manual for Good manufacturing practices. 1- Lack of gauges for temperature 2 no registration of temperature and pressure parameters, only of cooking time. 2 - They do not use manuals of procedures	Written recommendations were given and an agreement was signed to correct the errors.	Waiting for a new inspection.
	MACHISA, S.A.	1- evidence was found that SRM were included in the raw material that cannot be included in MBM. 2- The personnel who selects the raw material have no or little knowledge about the separation of SRM. 3-Traces of large bone particles were detected after cooking 4-The temperature and pressure gauges were not working correctly. 5- There is no recording and registration of temperature and pressure parameters that must be applied during cooking. 6- The floor of the plant had cracks and was in bad condition. 7- a production standard was not present, in terms of the chemical composition of the product that was officially registered. 8- the label of the final product, does not contain information about: lot number, production date, expiration date. 9-A detailed record of sales was not available 10- Rodent control plan was insufficient	Written recommendations were given and an agreement was signed to correct the errors	Waiting for a new inspection
Feed mills (bovine)	Nutrición Animal, S.A.	contamination in mixer and the production cycle	A Written recommendation was made to use a separate mixer and	Waiting for response of the plant

			by species (This plant uses MBM for the production of pet food)	filler just for the production of feed containing MBM to avoid cross contaminations	
2010	RENDERER 1-	MATADERO DE CHIRIQUÍ, S.A.	1 - Deficiencies in the daily record of temperature and pressure cooker 2 - Weaknesses in pest control 3-structures with defects of physical separation and space 4-deficiency in the finished product labeling 5-Deficiency in the cutting of bones 6-Not implemented GMP and SSOP plans	Written recommendations and request for compliance 1-Implementation of a daily record of temperature and pressure 2 - Implementation of an efficient and documented in rodent control 3 - Implement changes to the facility in search of physical space. 4-Implement tagging the bag using the legal standard 5 - Improve or acquire a better cutting equipment 6-Implement GMP and SSOP plans	Periodic follow-up monitoring
	2-	CARNES DE COCLÉ, S.A.	1-Deficiency in the daily record of temperature and pressure cooking 2 - Weaknesses in pest control 3 - Structures with physical defects and space separation 4 - Impairment of bone cutting 6 - Not implemented GMP and SSOP plans	Written recommendations and request for compliance 1-Implementation of a daily log and pressure temperature 2 - Implementation of an efficient and documented in rodent control 3 - Implement changes to the facility in search of physical space. 4 - Improve or acquire a better cutting equipment 6 - Write and implement a GMP and SSOP	Periodic follow-up monitoring
	3-	SERVICARNES, S.A.	1 - Deficiency record temperature and pressure control 2 - Deficiencies in control sales 3-No plans are implemented GMP and SSOP 4-deficiency in the pest control 5 - Product without registration 6 - Establishment without the Official Health Certificate	Written         recommendations         and       request       for         compliance         1-Implementation of a         daily       record       of         temperature       and         pressure         2-Implement a sales         record       focused on         product       traceability         3-Implementing       a         GMP plan and SSOP       4         4       Implement a pest         control       5         5       Register         for sale and       manage the	Periodic follow-up monitoring

				Certification	
	4-	Agrocarnica Industrial, S.A.	1 - Impairment record temperature and pressure control 2 - Deficiencies in control sales 3-No plans are implemented GMP and SSOP 4-deficiency in the pest control 5 - Product without registration 6-without the Official Health Certificate	Written         recommendations         and       request       for         compliance         1-Implementation of a         daily       record       of         temperature       and         pressure         2-Implement a sales         record       focused on         product       traceability         3-Implementing       a         GMP plan and SSOP         4 - Implement a pest         control       5         5 - Register       free         products for sale and         manage       the Health         Certification	Periodic follow-up monitoring
	5-	EL RODEO, S.A.	1 - Impairment record temperature and pressure control 2 - Deficiencies in control sales 3-No plans are implemented GMP and SSOP 4-deficiency in the pest control	Written         recommendations         and       request         for         compliance         1-Implement a daily         record of temperature         and       pressure         2 - Implement a sales         record focused on         product       traceability         3-Implementing       a         GMP       plan         4 - Implement a pest       control	Periodic follow-up monitoring
	6-	MACELLO, S.A.	<ol> <li>Impairment of cooking gas control that affect the population</li> <li>Poor record material</li> </ol>	Written recommendations and request for compliance 1 - Improve the gassing team 2 - Set the log of raw material	Periodic follow-up monitoring
2010	FEED MILLS 1-	PLANTA PROCESADORA DE ALIMENTO JUAN XXIII	<ol> <li>Use of HCH Has separate line for ruminants</li> <li>No plans are implemented GMP and SSOP</li> <li>2-deficiency in rodent control</li> <li>Potential for cross</li> <li>contamination from raw materials</li> <li>handling</li> <li>Deficiencies in the registration of brands.</li> <li>Impairment labeling</li> </ol>	Written recommendations and request for compliance 1-Implementing GMP plans and SSOP 2 - Implementing rodent control plan 3 - Improve the management of raw material HCH 5 - Improve product labeling 6 - Register for free products sale	Periodic follow-up monitoring
	2-	COOLECHE R.L (PLANTA DE ALIMENTO)	1 - Use of HCH 2 - A single mixer (possible cross- contamination) 3-Inadequate	Written recommendations and request for compliance	Periodic follow-up monitoring Laboratory test were negative on

		labeling 4-No plans are implemented GMP and SSOP 5 - Impairment pest control 6 - Deficiencies in labeling	1-implement GMP plans and SSOP 2-Implementation rodent control plan 3 - Register your product for free sale 4 - Improved tagging as the norm. Faced with a possible cross-contamination was recommended a-establish a separate line for ruminants b-HCH Delete feedstock. c-Eliminate the production of ruminant feed 5 - 2 sample was collected for laboratory feed	2 occasions
3-	NUTRICION ANIMAL, S.A.	<ol> <li>Use of HCH</li> <li>A single mixer (possible cross- contamination)</li> <li>Has GMP and SSOP plans without implementing</li> </ol>	Written recommendations and request for compliance 1-implement GMP plans and SSOPs that were reviewed by the competent authority 2-Faced with a possible cross- contamination was recommended: a-establish a separate line for ruminants b-HCH Delete feedstock. c-Eliminate the production of ruminant feed 5 - 1 sample was collected for laboratory feed	Periodic follow-up monitoring 1 - The sample was positive indicating cross- contamination 2 - The plant decided to remove the cattle production line
4-	AGROINDUSTRIAL SAN JOSE	1 - Use of HCH 2-Deficiency in pest control 3 - No plans are implemented GMP and SSOP 4 - Not made for ruminants	Written recommendations and request for compliance 1-Implementing GMP plans and SSOP 2-Implement a rodent control plan	Periodic follow-up monitoring
5-	ALMACÉN AGRICOLA DE SANTIAGO	1 - Use of HCH 2 - A single mixer (possible cross contamination. It is made for cattle sporadically 3-deficiency on the label 4-deficiency in the pest control 5 - Does not handle GMP plans	Written         recommendations         and       request         for         compliance         1-GMP         Implementation plans         2       Implementing         rodent       control         For a possible cross-contamination:         1-Establish       a         separate       line         2-No       MBM         3-Do       not         feed for ruminants       Written	Periodic follow-up monitoring

	PIENSOS EL RODEO	1 - Use of HCH. No results for Ruminant 2-No plans GMP and SSOP	recommendations and request for compliance 1-Implementing GMP plans and SSOP	monitoring
		implemented 3-deficiency in the pest control 4-defects in the infrastructure, very little	2-Implementation rodent control plan 3 - Enhance the infrastructure to improve the handling of raw materials and finished products	
7-	AGROPECUARIA PROSUMA	<ol> <li>Use of HCH. Do not process for ruminants</li> <li>Two mixers but are used in all species</li> <li>deficiency in the pest control</li> <li>No plans are implemented GMP and SSOP</li> </ol>	Written recommendations and request for compliance 1-Implementing GMP plans and SSOP 2 - Implement plan for rodent control	Periodic follow-up monitoring
8-	AGROCARNES INDUSTRIALES, S.A.	Use of MBM 1-A single mixer Possible cross contamination 2-No plans GMP and SSOP implemented 3-deficiency in the pest control 4 - Improper handling of raw materials	Writtenrecommendationsandrequestforcompliance1-Implementing GMPplansandSSOP2-ImplementationrodentcontrolplanFor a possible cross- contamination3 - We recommend a separateseparatelinefor ruminants.4 -samplewas collectedfor laboratory	Periodic follow-up monitoring 1 - The result of the sample was negative 2 - Plant on surveillance
9-	CENTRAL DE ENGORDE	1- Using HCH. Independent line of ruminant 2-Possible cross contamination from improper handling of raw materials HCH 3-No GMP and SSOP implemented plans 5-Deficiency in pest control 6-deficiency on the label 7 - If official health certification	Written recommendations and request for compliance 1-implement urgently and SSOP and GMP plans to eliminate possible cross contamination 2-Implementation rodent control plan 3 - Improve the legal standard labeling as 4 - Managing Health Certification 4 - Sampling	Periodic follow-up monitoring 1 - The result of the sample was negative 2 - Plant on surveillance
10	AGROPECUARIA RIO DUQUE	<ol> <li>Use of HCH. No results for ruminants.</li> <li>Not GMP plans implemented and SSOPs.</li> <li>deficiency in the pest control</li> </ol>	Written recommendations and request for compliance 1-implement GMP plans and SSOP 2-Implement a rodent control plan	Periodic follow-up monitoring
11	grupo la Hacienda	1- Using HCH. No results for ruminants	Written recommendations and request for compliance	Periodic follow-up monitoring

	2-No BPM and SSOP implemented plans 3-deficiency in rodent control 4-Deficiency labeling 5-Health Without certification	1-implement GMP plans and SSOP 2-Implementation of rodent control plan 3-To improve the labeling according to legal standard. 4 - Managing Health	
	certification	Certification	

The above table reflects a positive establishment to the presence of ruminant-derived protein (NUTRITION ANIMAL S.A). In this case, given the evidence discovered at the time of the inspection visit, the technical team told the company that there was a potential risk of cross contamination, so they should take immediate corrective action.

Whereas, based on the provisions of Resolution ALP-045-ADM-01, now replaced by Executive Decree 383 of 2010 and Act 23 of 1997, the infringement found is considered a minor and given that this production line company is small, the company decided to permanently remove the production line for cattle before they obtain the lab results, arguing that the cost benefit for the correction of the nonconformity detected, was not profitable.

However, the results of laboratory analysis indicate a violation of the legislation, so the DINASA has initiated, through the Office of Legal Advisory (MIDA), the implementation of the sanction.

4.2.5.2. Documentation, in the form of the following table, on each plant above processing non-ruminant material with infractions, specifying the type of infraction and the method of resolution

Year (Information should be	Type of plant				
each of the 8 years for effectiveness	(renderer or feed mill)	Plant ID	Nature of infraction	Method of resolution	Follow up results
2003	Renderer	Pesquera Taboguilla, S.A.	1-Inadequate system of rodent control 2- Machines are very old. 3- Rotten raw materials 4- Bad smells in the area	Written recommendations were given and an agreement was signed to correct the errors.	The plant shut down operations
	Feed mills (bovine)	INDUSTRIAS DE NATA, S.A.	1-need to provide more light in the storage area for additives and avoid the deterioration of the vitamins2- raw materials must be stored on an elevation, away from the ground 3-improvement of the storage area, leaving a space of 50 cm between the wall and the materials. 4-Use a separate bucket for each additive	Written recommendations were given and an agreement was signed to correct the errors.	The plant corrected the errors
2004	Renderer	Recuperación de Proteína S.A.	<ol> <li>Products without the corresponding registration- 2-does not have a certificate of sanitary inspection</li> <li>3 no book for registration of official visitors.</li> <li>4-No documentation about rodent control</li> <li>5- No documentation of the size of the sieves</li> </ol>	Written recommendations were given and an agreement was signed to correct the errors.	Waiting for a new inspection
2005	Renderer	Recuperación de Proteína S.A.	1.there is no plan for rodent control. 2- The toilet has direct access to the work space. 3- No sign to indicate hand washing. 4- Products without official registration. 5- There are no official procedures for handling of raw materials (reception, sampling, storage)	Written recommendations were given and an agreement was signed to correct the errors.	The plant corrected the errors
2006 2007		PROMARINA, S.A.	1- too few rodent traps as a result of the growth of the plant	Written recommendations were given and an agreement was signed to correct the errors	The plant corrected the errors
2008	Dandarr	Desugaration	1 looufflatent more tot 5	Muitton	Malling Fre
2009	Renderer	Recuperación de Proteína S.A.	1- insufficient presentation of documentation about previous inspections 2- the documentation is not properly organised - 3- absence of official control of the laboratory. 4- The deficiences occurred because of a change of the management	Written recommendations were given and an agreement was signed to correct the errors	Waiting for a new inspection
2010	Renderer 1-	CARNARINA AVICOLA GRECIA	1-deficiencies, not implemented GMP and SSOP plans 2-deficiency in the control of rodents, not documented 3-deficiency in the documentation of the cooking process temperature and pressure 4-Deficiency labeling	Written recommendation and request for compliance with the findings 1 - Implementing GMP and SSOP plans 2 - Implement the daily monitoring of temperature and pressure 3 - Implement a rodent control 4 - Improved tagging	
	2-	PROTEINAS SELECTAS, S.A.	1-deficiencies, not implemented GMP and SSOP plans 2-deficiency in the control of rodents, not documented 3-deficiency in the documentation of the cooking process temperature and pressure 4-Deficiency labeling O2	Written recommendation and request for compliance with the findings 1 - Implementing GMP and SSOP plans 2 - Implement the daily monitoring of temperature and pressure 3 - Implement a rodent control 4 - Improved tagging	

# 4.2.6. Documentation explaining why, in light of the findings displayed in the preceding four tables, it is considered that there has been no significant exposure of cattle to the BSE agent through consumption of meat-and-bone meal or greaves of bovine origin.

In line with the provisions of Resolution 045, 2001, replaced by Executive Decree 383 of September 27, 2010, Panama has not used MBM or greaves derived from cattle, either imported of produced domestically, for the production of ruminant feed.

The production of MBM in rendering plants that use animal waste materials (from cattle, poultry, pigs, fish) as raw material is destined for exportation and the production of feed for pigs, poultry and, since recently (2009), for pets (dogs and cats).

The official monitoring and surveillance system is supervising this activity, and inspects whether the standards, for the reduction of infectivity, issued by the OIE are properly implemented and complied with.

In addition, the multispecies feed mills are implementing good production, storage and transport practices to prevent cross-contamination, following the guidelines of DINASA.

The samples taken within that system to the feed for cattle consumption, indicate that to date, has been detected by microscopy test, only one (1) case with presence of ruminant protein in their composition, as a result of cross-contamination, not of direct use for feed formula, confirming compliance with the official measure of prohibition applied in the last 9 years.

The following table reflects the analysis done for the consumption of cattle feed for the determination of protein of ruminant origin under direct microscopy technique.

DATE OF SAMPLING	PROVINCE	FEED MILL	SPECIE	TYPE OF FEED	RESULTS
	LOS		BOVINE	EATTENING	NEGATIVE
01-Dec-09	SANTOS	CENTRAL DE ENGORDE		TATTENING	
21-Jan-10	VERAGUAS	COOPERATIVA JUAN XXIII	BOVINE	DAIRY	NEGATIVE
21-Jan-10	VERAGUAS	AVICOLA GRECIA, S.A.	BOVINE	DAIRY	NEGATIVE
01-Feb-10	COCLÉ	FABIO MONTANO	BOVINE	DAIRY	NEGATIVE
01-Feb-10	COCLÉ	FABIO MONTANO	BOVINE	CALVES	NEGATIVE
04-Mar-10	COCLÉ	ZACARIA URRIOLA	BOVINE	DAIRY	NEGATIVE
04-Mar-10	COCLÉ	FRTILIZANTES SUPERIORES, S.A.	BOVINE	NUTRIENT	NEGATIVE
04-Mar-10	COCLÉ	INDUSTRIAS DE NATÁ, S.A	BOVINE	CALVES	NEGATIVE
05-Mar-10	COCLÉ	PIENSOS DEL OESTE, S.A.	BOVINE	FATTENING	NEGATIVE
05-Mar-10	COCLÉ	RACIONES CERES, S.A.	BOVINE	DAIRY	NEGATIVE
05-Mar-10	VERAGUAS	COOPERATIVA JUAN XXIII	BOVINE	FATTENING	NEGATIVE

Table 19. Laboratory analysis of feed intake in cattle to determine the origin of ruminant protein.

05-Mar-10	VERAGUAS	HACIENDA EL RODEO, S.A	BOVINE	FATTENING	NEGATIVE
05-Mar-10	VERAGUAS	COOPERATIVA JUAN XXIII	BOVINE	DAIRY	NEGATIVE
05-Mar-10	VERAGUAS	INST AGROPECUARIO JESÚS NAZARENO	BOVINE	DAIRY	NEGATIVE
05-Mar-10	VERAGUAS	PIENSOS DEL OESTE, S.A.	BOVINE	DAIRY	NEGATIVE
08-Mar-10	COCLÉ	ALIMENTOS RÍO GRANDE	BOVINE	FATTENING	NEGATIVE
08-Mar-10	COCLÉ	EMPRESAS MORENO, S.A.	BOVINE	FATTENING	NEGATIVE
08-Mar-10	COCLÉ	INDUSTRIA DE NATÁ, S.A.	BOVINE	DAIRY	NEGATIVE
30-Mar-10	VERAGUAS	FINCA EL CANGREJAL	BOVINE	BREEDING	NEGATIVE
30-Mar-10	VERAGUAS	HERMES RODRIGUEZ	BOVINE	BREEDING	NEGATIVE
01-Apr-10	PANAMÁ	ITALCO, S.A.	BOVINE	FATTENING	NEGATIVE
01-Apr-10	PANAMÁ	LA TABLEÑITA	BOVINE	FATTENING	NEGATIVE
01-Apr-10	PANAMÁ	ITALCO, S.A.	BOVINE	DAIRY	NEGATIVE
16-Apr-10	COCLÉ	COOLECHE, S.A.	BOVINE	DAIRY	NEGATIVE
16-Apr-10	VERAGUAS	CANGREJAL/Plinio E. Rodríguez	BOVINE	FATTENING	NEGATIVE
16-Apr-10	VERAGUAS	COOPERATIVA JUAN XXIII	BOVINE	FATTENING	NEGATIVE
16-Apr-10	VERAGUAS	INST AGROPECUARIO JESÚS NAZARENO	BOVINE	FATTENING	NEGATIVE
16-Apr-10	VERAGUAS	COOPERATIVA JUAN XXIII	BOVINE	DAIRY	NEGATIVE
23-Apr-10	COCLÉ	COOLECHE, S.A.	BOVINE	CALVES	NEGATIVE
11-May- 10	CHIRIQUI	COOLECHE, S.A.	BOVINE	FATTENING	NEGATIVE
11-May- 10	CHIRIQUI	MOLINO LEZCANO, S.A.	BOVINE	FATTENING	NEGATIVE
11-May- 10	CHIRIQUI	NUTRICIÓN ANIMAL. S.A.	BOVINE	CALVES AND STEERS	****POSITIVE
17-Jun-10	VERAGUAS	AVICOLA GRECIA, S.A.	BOVINE	BREEDING	NEGATIVE
10-Jun-18	VERAGUAS	AGROCARNES INDUSTRIAL	BOVINE	BREEDING	NEGATIVE
10-Jun-18	VERAGUAS	HACIENDA EL RODEO	BOVINE	DAIRY	NEGATIVE
06-Sep-10	PANAMÁ	ITALCO, S.A.	BOVINE	DAIRY	NEGATIVE
10-Sep-10	CHIRIQUI	MOLINO LEZCANO, S.A.	BOVINE	DAIRY	NEGATIVE
09-Oct-10	CHIRIQUI	COOLECHE, S.A.	BOVINE	DAIRY	NEGATIVE

\*\*\*\* Cross contamination (MBM used in shrimp feeding)

Source: Register and Accreditation Department/DINASA

It is important to state that the majority of the bovine population in Panama is only fed with grass in an extensive grazing system. Only a small percentage (specialized dairy farms), supplement their cattle with feed based on plant materials.

All of these aspects were taken into account in the year 2005, when EFSA experts conducted a GBR assessment, and classified Panama as a GBR category 1, or negligible risk, country.

This situation has remained constant, since as presented in this report, Panama has continued to implement BSE controls, which are verified by DINASA.

In addition to the above, it is important to note that dead animals on farms or during transportation, domestic or imported, do not enter the food chain, or human or animal (Decree 62 of 1957). Most are buried or burned and in some cases they are consumed by scavenging birds (vultures) and other predators.

The recognition of Panama as a controlled risk country for BSE by the OIE, in May 2010, has led to the updating procedures, to avoid cross contamination, related to the processing of raw materials, which will apply as provided in paragraph 2, Article 24 of Executive Decree 383 of 2010, which regulates matters relating to the use of meat and bone meal (MBM) in ruminant animals, noting that food production plants that use animal MBM ruminants, must establish separate production lines for feed with or without ruminant MBM.

Similarly, Article 26 of Decree 383 of 2010 provides that the DINASA develop and adopt measures for the transportation, storage, sealed and distribution of animal feed in order to avoid cross-contamination of animal feed and other substances used in animal production.

Based on the reasons above, we can conclude that probability of exposure of cattle in Panama to the causal agent of BSE is negligible.

## 4.2.7. Documentation of husbandry practices (multiple species farms) which could lend themselves to crosscontamination of cattle feed with meatand-bone meal and greaves destined to other species.

Cattle farming systems in Panama are mostly extensive, and their feed is based on pastures. A more detailed description of cattle production is provided in the introduction (Chapter 2.1).

#### Conclusion of chapter 4.2:

Cattle production in Panamá is done under an extensive grazing system without the use feed supplementation. of Panama does MBM feed ruminant not use as for Dead animals on the farm or during transport, domestic or imported; do not enter the food chain, or human or animal.

The surveillance system of the official veterinary services on the farms, in rendering plants and in feed mills established adequate controls to enforce this rule.

Therefore, we conclude that the probability of exposure of cattle to the BSE agent in MBM consumption is negligible.

### 5 Other requirements

### 5.1. Awareness program (Article 11.5.2.2)

# 5.1.1. Documentation indicating when the awareness program was instituted and its continuous application and geographical coverage.

Panama has implemented an awareness program with training and education activities in farmers' fairs or markets, and together with farmers' associations, through banners, leaflets and the bulletin ANIMAL HEALTH REPORTS. An annual training program has been established for veterinarians.

Training and awareness activities of BSE surveillance were initiated by the end of 1996, when several national and regional standards for the prevention of BSE were issued.

In the period 1997-2006, training activities were conducted informally.

In 2007-2008, theoretical and practical training for the staff of the official veterinary service (veterinarians, assistant veterinarians, laboratory staff, agronomists, agricultural technicians) were organised throughout the country, with emphasis on the collection of the obex.

In 2009-2010, training was conducted aiming at veterinary students and producer (farmers) explaining specifically what BSE is, how it is transmitted, its effect on trade, how the clinical signs can be recognized and how a report or notification can be made to the health authorities.

Also, four (4) technicians of the official laboratories from DINASA were trained in laboratory techniques for detection of BSE at INTA in Argentina, and in Costa Rica.

Additionally, international organizations present in Panama provided support in the training of laboratory staff, such as OIRSA, PAHO, IICA, FAO (this within the framework of the project Strengthening of the system for preventing BSE), among others.

In 2010, several presentations were made, to publicize the procedure followed to obtain the categorization of Panama as a Controlled Risk Country in the Congress of School of Veterinary Medicine, with the participation of 210 people including students, veterinarians, farmers and agricultural professionals from across the country, as well

as in the 11th. Veterinary Medical Congress, which had the participation of 130 veterinarians.

To next year, 2011, the DINASA's Department of Health Education is developing a Continuing Education Program in which BSE has been included. The program does not only aim at staff of the official veterinary service, but also at producers, importers and students.

Details of the above can be found in Table 20.

# 5.1.2 Documentation on the number and occupation of persons who have participated in the awareness program (veterinarians, producers, workers at auctions, slaughterhouses, etc.)

During the trainings from 2007 to 2010, 324 officials from official veterinary service, 433 producers and 60 students were trained in the following topics:

- Overview of the disease, OIE guidelines (monitoring and point system for surveillance) and reporting of animals with clinical signs,
- Sampling of obex, dentition
- Sampling of obex, analysis of the current situation considering an sudden outbreak of a transboundary disease, how and when to schedule communication with farmers, international trade restrictions for BSE
- Characteristics of BSE, how it affects trade, reporting of cases with clinical signs, similarities of BSE with rabies

Table 20 below contains details of these training activities.

Number	Subject	Participants	Type of	Institutions	Provinces
activities			audience		
3 in 2007 6 in 2008 1 in 2009	Theory: General information about the disease, guidelines of the OIE (surveillance and surveillance points), information to be provided to farmers about reporting of clinical suspects	174	Official veterinarians, Paratechnicians, Veterinary Assistants, Agronomists Laboratory technicians	DINASA DINSAVE Dirección de Ganadería DEPA IDIAP DECA COPEG ISA	-Chiriquí -Veraguas -Coclé -Panamá Oeste(Capira) -Colón -Bocas del Toro -Los Santos
7 in 2008	Theory and practice: BSE surveillance and surveillance points, information to be provided to farmers about reporting of clinical	80	Official veterinarians Paratechnicians Veterinary Assistants, Laboratory technicians	MIDA DINASA DEPA	-Herrera -Colón -Coclé -Panamá -Chiriquí -Veraguas

Table 20. Presentations and awareness training

	suspects, how and when to schedule communication with farmers, international trade restrictions related to BSE, sampling of the obex				
1 in 2008 3 in 2009	Presentations: What is BSE, surveillance and surveillance points. how does it affect trade. reporting of clinical suspects, similarities with rabies	60	Students of Veterinary Medicine. and Agricultural school	University of Panamá - Instituto Profesional y Técnico Agropecuario del Silencio	-Panamá -Bocas del Toro
6 in 2008	Presentations: What is BSE, how does it affect trade, reporting of clinical suspects, similarities with rabies	433 70	Farmers Veterinary Assistants of MIDA	Farmers MIDA	-Bocas del Toro -Chiriquí -Colón -Panamá -Darien
June 2010	Taking care of Rabies. What is BSE. How does affects trade	65	Farmers		-Herrera
30 June al 2 de July 2010	Speech: Bovine Spongiform Encephalopathy, Panamanian Experience	210	Students, profesors, Veterinaries	7th Scientific Congress of the Faculty of Veterinary Medicine	-Panamá
August 2010	Taking care of Rabies. What is BSE. How does affects trade.	8	Students, profesors, Veterinaries farmers		-Panamá Colón
18-20 August de 2010	Speech: Bovine Spongiform Encephalopathy, Panamanian Experience	67	Students, profesors, Veterinaries	Congress of Veterinary Medicine, Veterinary Medical Association of Panama	Coclé
3 September de 2010	Speech: Bovine Spongiform Encephalopathy, Panamanian Experience	12	Veterinaries, Food engineers, laboratorians	Scientific and Technical Committee for Food Safety (CCTSA) of AUPSA	Panamá
17 de September de 2010	Speech: Bovine Spongiform Encephalopathy, Panamanian Experience	8	Farmers, Cattle breeders	Asociación Nacional de Ganaderos	Panamá

# 5.1.3 Documentation of materials used in the awareness program (the manual, supportive documents, or other teaching materials).

In 2008, a total of 3500 leaflets with information about BSE were produced, which have been distributed during the different presentations, training sessions, markets

and meeting activities with farmers. Also, a banner was created with images of the prion cycle, and history of the disease globally.

On a the technical level a Manual of Procedures for BSE Surveillance was elaborated and distributed to the official veterinarians of MIDA.

To support the outreach activities and education efforts about the important aspects of BSE, there have been a series of activities through the media, radio and written press, as is described in the following table (Table 21).

Date	Radio Station- Newspaper
06/11/2007	Publicaton in newspaper CRÍTICA
25/03/2008	Publication in newspaper CRÍTICA
03/04/2008	Radio broadcasting in the agricultural bulletin W RADIO
28/05/2008	Radio broadcasting "From the farm" HOT STEREO
03/07/2008	Radio broadcasting in the agricultural bulletin W RADIO
15/08/2008	Radio Stations: CHIRIQUÍ, ONDAS CHIRICANAS, FARO DE DAVID
15/08/2008	Radio stations : CHT BUGABA, Radio CRISTAL, EXITOSA

Table 21. Education and broadcasting - Oral and written press

In addition to the above and considering that from May 2010, Panama was recognized by the OIE as a Controlled Risk country for BSE, has established a communication and awareness strategy, based on Article 14 of Executive Decree 383 September 27, 2010, "Whereby adopting the regulations for the epidemiological surveillance of bovine spongiform encephalopathy (BSE) and other Transmissible Spongiform Encephalopathies (TSE's)" which is aimed at veterinarians, farmers and people working in transport, trade and slaughter of cattle, and food products as well as other actors on the risks associated with BSE and other TSE's.

### 5.1.4 Documentation on the contingency plan

There is an animal health emergency plan, which was established by Executive Decree 168 of 2001 and is implemented through the National Emergency System in Animal Health (SINESA). The objective of this National Emergency System is the control and eradication of exotic and emerging animal diseases and pests in Panama.

The SINESA is made up of eleven (11) representatives from different relevant governmental institutions and has two operating levels: the central level or the SINESA Management Committee and the regional level formed by the regional executing structures, called the Executive Group of the Animal Health Emergency Program (GEPESA).

The Management Committee of SINESA is responsible for managing, supervising and coordinating activities against disease outbreaks carried out in the field.

When an outbreak of an exotic or emerging disease is suspected as a result of active or passive surveillance, the field veterinarian will collect appropriate samples and activate the epidemiological system. Once the presence of an exotic or emerging disease is confirmed by laboratory diagnosis, SINESA will take the appropriate measures and will provide financial funds for the control and eradication, according to the Executive Decree.

#### Conclusion of chapter 5.1:

The awareness program in Panama began at an early stage and has been targeted to stakeholders along the entire chain, both from the public and the private sector. Different means of communication have been used to achieve a greater coverage. Finally, a contingency plan is being implemented.

Therefore, we can conclude that producers and veterinarians in Panama are aware of the disease and have the ability to react appropriately, when a suspected case of BSE is detected.

### 5.2 Compulsory notification and investigation (Article 11.5.2.3)

# 5.2.1 Documentation on the date of official publication and implementation of compulsory notification. Including a brief description of incentives and penalties.

Panama applies the guidelines issued by the OIE, in which BSE is listed as a notifiable disease in accordance with the provisions of Article 13 and 19 of Act 23 of 1997.

Also, Panama has implemented a disease notification system since 1967 through Decree Law 15. The specific case of notification of bovine rabies suspicion has been regulated by Executive Decree 20 of 1999.

Articles 74 and 76 of Act 23 of 1997, state that any natural or legal person may report directly to MIDA any facts, acts or omissions that may pose a threat to animal health. Anybody reporting such threats shall be entitled to receive twenty-five (25%) cent of the fines related to his report as an additional incentive.

Similarly, Article 78 of Act 23 of 1997, section 10, amended by Act 44 of 2001 and Act 62 of 2002 establishes that it is an offense to perform actions or omissions contrary to the health standards in that law. These offences shall be punished with a fine between one hundred and two million (\$ 100.00 to 2,000,000.00) dollars, depending on the severity of the error and the aggravating and mitigating circumstances of the situation.

In addition to the above and considering that from May 2010, Panama was recognized by the OIE as a Controlled Risk country for BSE, compulsory notification and investigation has been updated, based on Article 5 of Executive Decree 383 September 27, 2010, "Whereby adopting the regulations for the epidemiological surveillance of bovine spongiform encephalopathy (BSE) and other Transmissible Spongiform Encephalopathies (TSE's)" which established in accordance with Article 19 of Act 23 of 1997, to declare the Bovine Spongiform Encephalopathy (BSE) and other Transmissible Spongiform Encephalopathies (TSE's) as a notifiable disease.

For the compliance with this provision: a) Any person who has suspicion or evidence of signs consistent with BSE or other TSE's in animals own or belong to another person, living or dead, shall notify the DINASA within a period not exceeding twenty-four hours from the time he was informed.

b) DINASA shall notify to OIE, all and every positive case of BSE and / or TSE's.

In this context, advice is given to staff of the official veterinary service, farmers, distributors, among others, during training events throughout the country, about reporting of animals with clinical signs compatible with BSE to the epidemiological surveillance system.

# 5.2.2 Documentation on the manual of procedures for investigation of suspect animals and follow-up of positive findings.

With the entry into force of the Executive Decree 383 of September 27, 2010 "Whereby adopting the regulations for the epidemiological surveillance of bovine spongiform encephalopathy (BSE) and other Transmissible Spongiform Encephalopathies (TSE's)" under the Article 11, in Panama has been established as the official definition of positive case and suspect case as follows:

### Positive Case and Suspect Case of BSE:

1. For the effects of the current Regulation, it is considered as "positive case" the animal that presence of Spongiform Encephalopathy (BSE) and other Transmissible Spongiform Encephalopathies (BSE) has been confirmed, by a laboratory of national or international reference, officially recognized for this objective.

2. For the effects of the current Regulation, it will be considered "suspect case", the animal older than 30 months of age, that presents or has presented neurological alterations with changes in its behavior and/or motor and /or in the sensitivity and/or progressive damage of its general state, without response to any specific treatment, and when a conclusive differential diagnosis to its clinical examination can be established.

3. Also, it will be considered a suspect case all of those declared as such by the National Direction of Animal Health (DINASA).

4. The declaration of an animal as positive will activate the execution of the National Emergencies System in Animal Health (SINESA).

In order to raise awareness among producers and the public sector about BSE, the Epidemiological Surveillance Program for BSE and Bovine Rabies was established in 2007. The program manager oversees the implementation of BSE- and rabies-related activities defined in the Annual Plan Work related to the disease that are executed by veterinarians and para-veterinarians in the field.

The notification procedure for BSE consists of the following steps:

• The producer reports the finding of dead animals or animals with clinical signs

• The field veterinarian visits the affected herd, to take the corresponding anamnesis (identification and registration of suspected cases)

• The veterinarian collects and sends the whole brain or obex for laboratory diagnosis

• The Laboratory receives, logs and processes the sample in accordance with the protocol established for the analysis

• If the diagnosis is negative for rabies, it is referred to the section of pathology for BSE analysis. Positive rabies findings are not considered for the diagnosis of BSE

• Preparation of a report with results for the Department of Epidemiological Surveillance.

The notification procedure in slaughterhouses is as follows:

• If animals with clinical signs compatible with BSE are observed during antemortem inspection, they are separated for further observation

- The animal is slaughtered at the end of the slaughter day
- The obex is collected and sent for laboratory diagnosis

• The Laboratory receives logs and processes the sample in accordance with established protocol for analysis.

• Preparation of a report with results for the Department of Epidemiological Surveillance.

#### Conclusion of chapter 5.2:

The notification of BSE has been compulsory for many years and the system includes incentives and penalties to ensure timely reporting.

Producers and official or private veterinarians have been sensitized to the presentation of clinical signs in cattle, also because it is a potential indicator of cattle infected with bovine rabies.

Therefore, it is likely that any clinical case of BSE present in the cattle population would be detected and reported.

# 5.3 Examination in an approved laboratory of brain or other tissues collected within the framework of the aforementioned surveillance system (Article 11.5.2.5)

5.3.1 Documentation as to the approved laboratories where samples of cattle tissues from the country, zone or compartment are examined for BSE. (If this is located outside the country, information should be provided on the cooperation agreement).

The Laboratory for Diagnostics and Veterinary Investigation "Gerardino Medina" of DINASA/MIDA is the only laboratory performing the histopathological and immunohistochemical diagnosis of BSE. It is located in Rio Tapia, Tocumen, Panama Province, Republic of Panama.
The procedures and methods are used as they are described in the Diagnostic Manual of the OIE. In Panama, only immunohistochemistry and histopathology are used.

Since 2002, BSE surveillance was initiated using histopathology and since 2008 both immunohistochemistry and histopathology are being used. Also in 2008, the Laboratory received scrapie positive control samples from the USDA.

Additionally, an International Workshop on BSE Diagnosis was developed in Panama within the framework of the FAO Project (TCP-RLA / 3113), in June 2009.

#### 5.3.2 Documentation of the diagnostic procedures and methods used.

Panama uses histopathology and immunohistochemistry techniques for the diagnosis of BSE, as they are defined and described in the Diagnostic Manual of the OIE.

In addition to the above and considering that from May 2010, Panama was recognized by the OIE as a Controlled Risk country for BSE, procedures have been maintained for Laboratories, supported by Article 13 of Executive Decree 383 of September 27, 2010, "Whereby adopting the regulations for the epidemiological surveillance of bovine spongiform encephalopathy (BSE) and other Transmissible Spongiform Encephalopathies (TSE's)" which states that the PRONEET shall use laboratories approved by the DINASA and tests prescribed and alternative recommended by the OIE for the diagnosis of BSE and other TSE's in animals and food for animal consumption.

## 5.3.3 Documentation that the diagnostic procedures and methods have been applied through the entire surveillance period.

The diagnostic procedures and methods used by the LADIV/DINASA during the surveillance period began with the histopathology test. After 2005, PANAFTOSA performed an audit of the laboratory and determined that the laboratory was suitable to perform immunohistochemistry.

The procedures for conducting histopathology and immunohistochemistry are based on guidelines established in the OIE Diagnostic Manual.

#### 6 BSE surveillance and monitoring system (11.5.2.4)

## 6.1 Documentation that the samples collected are representative of the distribution of cattle population in the country, zone or compartment.

Samples have been collected throughout the country. The provinces where most samples have been collected represent the provinces where the incidence of bovine rabies is higher, therefore, producers and veterinarians in these provinces are more sensitized to the manifestations of neurological signs in cattle.

Thus, the collected samples are representative for the geographical distribution of cattle in Panama (Table 22).

Province	2003	2004	2005	2006	2007	2008	2009	2010	Total
Chiriquí	0	4	0	0	0	7	9	4	24
Veraguas	0	5	9	1	1	5	3	2	26
Herrera	0	1	9	0	7	15	7	13	52
Coclé	1	0	9	2	74	19	1	1	107
Panamá	2	1	10	2	40	30	58	14	157
Colon	0	1	6	110	0	4	5	2	128
Los Santos	0	3	19	0	0	19	19	7	67
Bocas del Toro	1	0	7	0	17	25	0	0	50
Darien	0	0	0	0	0	2	0	1	3
Total	4	15	69	115	139	126	102	44	614

Table 22. Number of samples per province

# 6.2 Documentation of the methods applied to assess the ages of animals sampled and the proportions for each method (individual identification, dentition, other methods to be specified)

The age of cattle is determined by dentition, as described in the Manual for the Use of Dentition to determine the age of cattle (FSIS/USDA).

In addition to the above and considering that from May 2010, Panama was recognized by the OIE as a Controlled Risk Country for BSE, have been updated assessment regarding the age of animals, based on article 16, Executive Decree 383 of September 27, 2010, "Whereby adopting the regulations for the epidemiological surveillance of bovine spongiform encephalopathy (BSE) and other Transmissible Spongiform Encephalopathies (TSE's)" which states that for the calculation age, the sampling program at a slaughterhouse, as the value for surveillance, in charge to the inspection system administrator, shall determine the age of ruminants, using the system of dentition and keep records of them. Similarly, the traceability system registry official will be recognized.

# 6.3 Documentation of the means and procedures whereby samples were assigned to the cattle subpopulations described in 11.5.21, including the specific provisions applied to ensure that animals described as clinical met the conditions at Article 11.5.21

The BSE Surveillance Program does not define a specific number of samples for each of the subpopulations described in Article 11.6.21. Sampling was conducted in all subpopulations, but with emphasis on animals showing clinical signs.

To determine which animals is considered a suspect case, the case history described in the medical records of field veterinarians is used to check that the animals present signs consistent with BSE. To characterize what animal is considered suspect case of BSE, depends on the history described in the clinical field sheets used by veterinarians, which verifies all animals over 30 months has shown expressing or Neurological disorders, such changes in behavior and / or motor and / or sensitivity and / or progressive deterioration of general condition, without any specific treatment response, and we can not conclusively establish a differential diagnosis to clinical examination.

Similarly, during the ante-mortem inspection the slaughterhouse veterinarian checks the documentation and evaluates the general condition of cattle when they arrive at the slaughter plant. Any unusual from the normal pattern are recorded.

#### 6.4 Documentation of the number of animals meeting Article 11.6.21. as compared to the numbers of clinical samples submitted in previous years in accordance to the former provisions in the Code, and explanation of possible differences.

Because the country's health status has not changed, the epidemiological BSE surveillance from 2003 to 2013 was conducted by using the current case definitions.

Category		Ages								
	>1 - <2 years	>2 - < 4 years	>4 - < 7 years	>7 - < 9 years	> 9 years					
Clinical suspects	0	63	127	78	4	272				
Emergency slaughter	1	3	3	3	0	10				
Dead animals	0	19	28	7	4	58				
Routine Slaughter	5	63	127	66	13	274				
Total	6	148	285	154	21	614				

For details of the above, we present the following table 23.

#### Table 23. Number of samples per category and age

### 6.5 Documentation, based on the following table, of all clinically suspect cases notified complying with the definition in Article 11.6.21.

During the seven-year surveillance period, 249 clinical suspects were detected. 23.3% were between the age of 2 and 4 years, 45.8% between 4 and 7 years, 29.3% between 7 and 9 years and the remaining 1.6% were 9 years or older. 62 clinical suspects were identified on the farms, 187 were detected in slaughter plants. The clinical signs reported most frequently were neurological symptoms and incoordination.

#### 6.6 Documentation according to the following table, that the number of target points applicable to the country, zone or compartment and its BSE surveillance requirements (Type A or type B surveillance as a result of the

## risk assessment of section 1) are met as described in Articles 11.5.21. and 11.5.22.

The total number of points for the period 2003-2010 is 129041,95. The risk population in Panama was estimated at 570,000; therefore, the required number of points for this population is 60,000, over a period of 8 years and under a Type A surveillance. Panama exceeded this target by 100%.

The surveillance began in 2003, but very few samples were collected during this year. In subsequent years surveillance activities were strengthened.

				2003				
			Sur	veillance Po	pulations			
	Routine Sla	aughter	Faller	n Stock	Casualty	Slaughter	Clinical susp	ect
	Samples	Points	Samples	Points	Samples	Points	Samples	Points
>1 - < 2								
<u>&gt;</u> 2 - < 4 years							1	260
<u>&gt;</u> 4 - < 7 years							2	1500
<u>&gt;</u> 7 - < 9 years							1	220
<u>&gt; 9</u> years								
Subtotals								1980
Total points				•	1980			

				2004								
Surveillance populations												
	Routine Sla	aughter	Fallen	Fallen Stock		Casualty Slaughter		ect				
	Samples	Points	Samples	Points	Samples	Points	Samples	Points				
>1 - < 2 years												
<u>≥</u> 2 - < 4 years			3	0.6			2	520				
<u>&gt;</u> 4 - < 7 years			7	6.3			2	1500				
<u>&gt;</u> 7 - < 9 years							1	220				
<u>&gt; 9</u> years												
Subtotals				6.9				2240				
Total points				2	246.9							

2005								
	Surveillance popu	ulations						
Routine Slaughter Fallen Stock Casualty Slaughter Clinical suspect								

	Samples	Points	Samples	Points	Samples	Points	Samples	Points
>1 - < 2								
years								
<u>&gt;</u> 2 - < 4			7	1.4				
years								
<u>&gt;</u> 4 - < 7	4	0.8	11	9.9			16	12000
years								
<u>&gt;</u> 7 - < 9	4	0.4	1	0.4			24	5280
years								
<u>&gt; 9 years</u>				11.7			2	90
Subtotals								17370
Total				17	382.9			
points								

				2006									
	Surveillance populations												
	Routine Slau	ghter	Faller	n Stock	Casualty	Casualty Slaughter		ect					
	Samples	Points	Samples	Points	Samples	Points	Samples	Points					
>1 - < 2													
years													
<u>&gt;</u> 2 - < 4	26	2.6					5	1300					
years													
<u>&gt;</u> 4 - < 7	33	6.6					9	6750					
years													
<u>&gt;</u> 7 - < 9	25	2.5					4	880					
years													
<u>&gt; 9</u> years	13	0											
Subtotals		11.7						8930					
Total	8941.7												
points													

				2007							
Surveillance populations											
	Routine Slau	ghter	Fallen	Stock	Casualty	Slaughter	Clinical susp	ect			
	Samples	Points	Samples	Points	Samples	Points	Samples	Points			
>1 - < 2 years											
<u>&gt;</u> 2 - < 4 years	9	0.9					10	2600			
<u>&gt;</u> 4 - < 7 years	36	7.2					36	27000			
<u>&gt;</u> 7 - < 9 years	23	2.3					24	5280			
<u>&gt; 9</u> years			1	0.1							
Subtotal		10.4		0.1				34880			
Total points				34	1890.5						

2008								
Surveillance populations								
Routine Slaughter Fallen Stock Casualty Slaughter Clinical suspect								

	Samples	Points	Samples	Points	Samples	Points	Samples	Points
>1 - < 2	5	0.05						
years								
<u>&gt;</u> 2 - < 4	10	1	3	0.6	2	0.8	16	4160
years								
<u>&gt;</u> 4 - < 7	24	4.8	1	0.9	2	3.2	29	21750
years								
<u>&gt;</u> 7 - < 9	11	1.1	1	0.4	1	0.7	16	3520
years								
<u>&gt; 9 years</u>			3	0.3			2	90
Subtotals		6.95		2.2		4.7		29520
Total				29	533.85			
points								

	2009										
Surveillance populations											
	Routine Slau	ghter	Fallen Stock		Casualty S	laughter	Clinical susp	ect			
	Samples Points		Samples	Points	Samples	Points	Samples	Points			
>1 - < 2					1	0.4					
years											
<u>&gt;</u> 2 - < 4	16	1.6	2	0.4			24	6240			
years											
<u>&gt;</u> 4 - < 7	24	4.8	3	2.7	1	1.6	20	15000			
years											
<u>&gt;</u> 7 - < 9	3	0.3	3	1.2	2	1.4	3	660			
years											
<u>&gt; 9 years</u>											
Subtotals		6.7		4.3		3.4		21900			
Total	21914.4										
points											

				2010									
	Surveillance populations until SEPTEMBER 2010												
	Routine	Slaughter	Fallen Stock		Casualty	Slaughter	Clinical	suspects					
	Samples	Points	Samples	Points	Samples	Points	Samples	Points					
>1 and	0	0	0	0	0	0	0	0					
<2 years													
≥2 and	5	0,5	1	0,2	1	0,4	5	1300					
<4 years													
≥4 and	11	2,2	1	0,9	0	0	13	9750					
<7 years													
≥7 and	1	0,1	1	0.4	0	0	5	1100					
<9 years													
≥9 years	0	0	0	0	0	0	0	0					
Subtotals	17	2,8	3	1,5	1	0,4	23	12150					
Total points		12151.7											

Accumulated Points: 2003 to 2010= 129041,95

## 6.7 Indicate the number of adult cattle (over 24 month of age) in the country, zone or compartment

The cattle production system, as described above, clearly distinguishes the categories of intensive dairy farms and of dual purpose farms, as those populations where concentrates could be used to supplement cattle.

According to this categorization the cattle risk population of cattle over 24 months was determined at approximately 570,000 animals. It was also determined to proceed with Type A surveillance, according to which Panama had to achieve 120,000 points in a period of seven years.

Panama exceeded this target, as shown in the tables in chapter 6.6.

## 7 BSE history of the country, zone of compartment (11.5.3. and 11.5.4.)

## 7.1 Documentation of whether a case of BSE has ever been diagnosed in the country, zone or compartment.

BSE has never been detected in Panama.

In 2005, Panama was rated as a GBR category 1 country, which means it was considered highly unlikely that domestic cattle were infected with the BSE agent. In addition, in May 2010, Panama was recognized by the OIE as Controlled Risk country for BSE, thus the probability that this disease has been introduced to Panama, is negligible.

The importation of feed containing MBM, live cattle and bovine products is very limited and mainly originates from countries that have received some kind of categorization by the OIE.

Concomitantly to recognition of Panama as a Controlled Risk country, have been updated standards for the import of dog and cat food containing MBM (Resolution DINAN-116-2009) as well as for import and domestic control of live animals (Executive Decree 383-2010), all of which are in accordance with the provisions of Chapter 11.5 of the OIE.

The only feed containing MBM that was imported was cat and dog food. This was imported ready-to-use and properly pre-packaged. As for feed for aquaculture species, the imported feed contained fishmeal as the main source of protein.

The livestock production system in Panama is very extensive with most animals being raised on pasture without any supplementation. Feed is used only in the 4% of intensive dairy farms and possibly in some dual purpose farms. However, the level of production of these dual purpose farms is very low, thus leaving the producers with very low financial resources and few incentives to buy feed.

Panama has established a surveillance program that has been in place since 2003, in compliance with the requirements of the OIE, and no positive sample was ever detected.

The diagnostic techniques used in the surveillance program meet the guidelines in the Diagnostic Manual of the OIE, throughout the entire surveillance period.

Since many years, Panama has an awareness program for BSE in place, which targets both public and private stakeholders along the production chain.

The notification of suspected cases of BSE is compulsory and its omission results in sanctions. Producers and veterinarians are aware of cattle displaying any neurological symptoms, because bovine rabies is still a disease that affects the cattle population.

As a corollary to the above and considering that from May 2010, Panama was recognized by the OIE as a Controlled Risk country for BSE, has been updated national legislation, by issuing Executive Order 383 of 27 September 2010 "Whereby adopting the regulations for the epidemiological surveillance of bovine spongiform encephalopathy (BSE) and other Transmissible Spongiform Encephalopathies (TSE's)" which covers all aspects already considered and which strengthens the official surveillance of the disease.

Based on these factors, we can conclude that the probability that BSE is present in the domestic livestock population of Panama is insignificant; therefore, Panama can be considered as a negligible risk country for BSE.