COMISION NACIONAL DE SANIDAD AGROPECUARIA
DIRECCION GENERAL DE SALUD ANIMAL

TECHNICAL INFORMATION ON QUINTANA ROO STATE AS FREE ZONE OF CLASSICAL SWINE FEVER

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TECHNICAL INFORMATION ON QUINTANA ROO STATE AS FREE ZONE OF CLASSICAL SWINE FEVER

I. AUTHORITY, ORGANIZATION AND INFRASTRUCTURE OF VETERINARY SERVICES

Competent federal and state animal health authorities rely on the following legislation and Mexican Official Standards for swine diseases:

Federal Authorities

Federal Metrology and Standardization Act, Third Chapter, Articles 52 to 57 (June 30, 1992), as well as the decree amending, adding and repealing several provisions under the Federal Metrology and Standardization Act (Federal Official Gazette, May 20, 1997).

Federal Animal Health Act, Third Chapter, Article 4 (June 18, 1993).

Mexican Official Standard NOM-037-ZOO-1995, National Campaign against Classical Swine Fever.

Mexican Official Standard NOM-036-ZOO-1996, Minimum Requirements for Classical Swine Fever Vaccines.

Mexican Official Standard NOM-007-ZOO-1994, National Campaign against Aujeszky's Disease.

Mexican Official Standard NOM-046-ZOO-1996, Minimum Requirements for Aujeszky's Disease Vaccines.

Mexican Official Standard NOM-046-ZOO-1996, National Epidemiological Surveillance System.

Mexican Official Standard NOM-003-ZOO-1994, Requirements for Laboratory Authorization to Perform Animal Health Tests.

Mexican Official Standard NOM-018-ZOO-1994, Veterinarians Certified as Verification Units Qualified to Provide Official Animal Health Services.

Decree expanding in the national territory the National Animal Health Emergency Mechanism, in order to diagnose, prevent, control and eradicate the classical swine fever, published in the Federal Official Gazette on December 18, 1997.

State Authorities

Federal Metrology and Standardization Act, Third Chapter, Articles 52 to 57 (June 30, 1992), as well as the Decree amending, adding and repealing several provisions under the Federal Metrology and Standardization Act (Federal Official Gazette, May 20, 1997).

Federal Animal Health Act, Third Chapter, Article 4 (June 18, 1993).

State of Quintana Roo Livestock Act, Second Chapter, Article 5 (December, 1976).

ANIMAL HEALTH INFRASTRUCTURE

a) Federal Structure

The Ministry of Agriculture, Livestock and Rural Development (SAGAR) has a state delegate and an Assistant Delegate for Agricultural Affairs in Quintana Roo. See related organization chart in Appendix 1.

Some 109 veterinarians are currently certified to treat classical swine fever and Aujeszky's disease; none reside in the state of Quintana Roo. Government-employed veterinarians, in conjunction with those in charge of the commercial farms, carry out epidemiological surveillance of the disease.

The state is divided into three Rural Development Districts (RDD) with the following technical personnel attached to SAGAR:

Rural Development District Number	Veterinarians
123	6
124	1
125	7
Total	**14**

Seven government veterinarians work under the Assistant Delegate for Agricultural Affairs in monitoring this disease throughout the state.

Six plant and animal health inspection stations supervised by veterinarians and government inspectors control all movements of animals, products and byproducts crossing international borders. Qualified SAGAR personnel are stationed at 10 checkpoints and one quarantine station located in the state.

Additionally veterinarians employed by a TIF plant[1] where bovines are slaughtered, and by five municipal slaughterhouses, inspect the premises for animal health problems.

[1] TN: Spanish acronym for Federal Inspection Type plant.

b) State Structure

The State Livestock Promotion and Protection Committee (CFPP[2]) and the Secretariat of Economic Promotion and Rural Development play a major role in Quintana Roo's animal health infrastructure. Together with SAGAR's Assistant Delegate for Agricultural Affairs, acting on behalf of the federal government, they implement actions for regional animal health campaigns. The organization of this Secretariat is charted in Appendix 2.

c) Technical and Professional Schools

There are four agricultural schools in Quintana Roo. Agricultural technicians graduating from these institutions offer their services in the field of animal health.

II. TYPE AND EXTENT OF SURVEILLANCE IN THE REGION

Active Surveillance

Entering the classical swine fever (CSF) eradication phase required statistical sampling of swine breeding throughout Quintana Roo. Some 1,894 serological samples were obtained in 1994. Processed by the National Center of Animal Health Diagnostic Services (CENASA[3]), all samples collected were negative in the CSF test. Data pertaining to this sampling process carried out in 1994, is detailed by type of farm and RDD in the following charts:

TYPE OF FARM	NUMBER OF FARMS SAMPLED	NUMBER OF SAMPLES OBTAINED
Commercial farms	53	891
Backyard units	111	1,003
Total		**1,894**

RDD	Number of samples
DDR Chetumal	550
DDR Felipe Carrillo Puerto	624
DDR Cancún	720
Total	**1,894**

In order to declare the state officially free from the disease, the absence of the CSF virus was technically verified by serological sampling carried out in swine farms throughout the state during 1995 and 1996.

It was determined that the size of the statistical sample to be collected would be as follows:

[2] TN: the Committee's Spanish acronym
[3] TN: The Center's Spanish acronym

a) **Commercial farms** – Some 30 samples from each of the 25 farms (a total of 750 samples).
b) **Backyard units** – A minimum of 1,542 samples.

Actually samples collected from commercial farms during this period, totaled 949 and samples from backyard units totaled 1,555. Samples were obtained as follows:

NUMBER OF SWINE PRODUCTION SAMPLES FOR QUINTANA ROO		
RDD	**Backyard Units**	**Commercial Farms**
	Number of samples collected	**Number of samples collected**
RDD 01	245	43
RDD 02	35	244
RDD 03	1,275	662
Total number of samples	**1,555**	**949**

Initially 2,292 samples were to be collected. In the end they came to 2,508, of which four were positive when tested with the immunoperoxidase technique. Additional testing (ELISA and viral interference) was performed in order to dismiss any possibility that the disease might be present. Although negative results were obtained on all four samples, epidemiological research was done on the farm where they had been taken, but no evidence of the disease was found.

In 1996 once negative results had been obtained from the laboratory, and it was proved that there was no evidence of the disease, formalities were begun for the state to be declared officially free. On June 11th of that same year, Quintana Roo was declared free from CSF, greatly favoring those engaged in swine production in the state and region.

As of Quintana Roo's release and during 1997, active epidemiological surveillance continued in the state, by statistically sampling commercial farms and backyard units. Results derived therefrom are listed below:

STATISTICAL SAMPLING AT COMMERCIAL FARMS IN THE STATE OF QUINTANA ROO, 1997
CLASSICAL SWINE FEVER

MUNICIPALITY	NAME OF FARM	SWINE POPULATION	%	SAMPLE SIZE
OTHON POMPEYO BLANCO	GRUPO LA LAGUNA	2,450	2.60	29
	GRUPO 26 DE ABRIL	200	0.21	29
	CBTA 11.	450	0.48	29
	EL LUGAR (¥)	0	0.00	0
	NUEVA VIDA (¥)	0	0.00	0
	LA CURVA (¥)	0	0.00	0
JOSE MARIA MORELOS	JESUS MARTINEZ ROSS	4,000	4.25	29
	SAN DIEGO	3,000	3.19	29
	DZIUCHE	3,700	3.93	29
FELIPE CARRILLO PUERTO	X-PICHIL	3,000	3.19	29
	SAN FRANSCISCO AKE	3,000	3.19	29
	RANCHO SAN MARTIN	400	0.42	29
BENITO JUAREZ	ARIC. NORTE PIE DE CRIA 1 (A)	7,853	8.34	29
	ARIC. NORTE PIE DE CRIA 1 (B)	7,853	8.34	29
	ARIC. NORTE PIE DE CRIA 1 (C)	7,853	8.34	29
	ARIC. NORTE PIE DE CRIA 2 (A)	11,615	12.34	29
	ARIC. NORTE PIE DE CRIA 2 (B)	11,615	12.34	29
	AGROPORCINA DE CANCUN (A)	621	0.66	29
	AGROPORCINA DE CANCUN (B)	621	0.66	29
	AGROPORCINA DE CANCUN (C)	621	0.66	29
	AGROPORCINA DE CANCUN (D)	621	0.66	29
	AGROPORCINA DE CANCUN (E)	621	0.66	29
	AGROPORCINA DE CANCUN (F)	621	0.66	29
	AGROPORCINA DE CANCUN (G)	621	0.66	29
	ARIC. NORTE MULTIPLICADORA	3,720	3.95	29
	AGROINDUSTRIAS PALMIRA S.P.R.	1,800	1.91	29
	U.E.E.E. PROCIC. No. 2 LEONA VICARIO	1,840	1.95	29
LAZARO CARDENAS	U.E.E.E. PORC. No. 1 EJIDO EL TINTAL	620	0.66	29
	U.E.E.E. PORC. No. 2 EJIDO EL TINTAL	620	0.66	29
	U.E.E.E. PORC. No. 1 E. KANTUNILKIN	620	0.66	29
	U.E.E.E. PORC. No. 2 E. KANTUNILKIN	620	0.66	29
	U.E.E.E. PORC. No. 1 KM. 80 I. ZARAG.	620	0.66	29
	U.E.E.E. PORC. No. 2 KM. 80 I. ZARAG.	620	0.66	29
	U.E.E.E. PORC. No. 1 E. VICENTE GRO.	620	0.66	29
	U.E.E.E. PORC. No. 2 E. VICENTE GRO.	620	0.66	29
	DELAGRO	10,500	11.15	29
	TOTAL	**94,156**	**100.00**	**957**

a) The size of the statistical sample taken at commercial farms was based on Cannon and Roe's formula (1982), assuming a 95% confidence and an expected prevalence of 10%.
b) 100% of the commercial farms were sampled.
c) 80% of the samples taken at full cycle farms were drawn from sows, 10% from boars and 10% from fattening pigs over four months old.

(*) = Empty farms.

Note: In the event these swine farms were restocked, 29 blood serums were sampled; or, if fewer than 29, 100% of the animals were sampled.

STATISTICAL SAMPLING AT BACKYARD SWINE PRODUCTION IN THE STATE OF QUINTANA ROO
1997
CLASSICAL SWINE FEVER

MUNICIPALITY	SWINE POPULATION	%	NUMBER OF UNITS	%	NUMBER OF UNITS SAMPLED	NUMBER OF SAMPLES PER UNIT	TOTAL SAMPLES PER MUNICIPALITY
OTHON POMPEYO BLANCO	17,800	33.09	4,450	33.09	99	5	495
JOSE MARIA MORELOS	8,200	15.24	2,050	15.24	46	5	228
FELIPE CARRILLO	8,500	15.80	2,125	15.80	47	5	236
BENITO JUAREZ	4,200	7.81	1,050	7.81	23	5	117
LAZARO CARDENAS	6,900	12.83	1,725	12.83	38	5	192
ISLA MUJERES	700	1.30	175	1.30	4	5	19
SOLIDARIDAD	7,500	13.94	1,875	13.94	42	5	208
TOTAL	**53,800**	**100.00**	**13,450**	**100.00**	**299**		**1,495**

a) The size of the statistical sample taken at backyard units was based on Cannon and Roe's formula (1982), assuming a 95% confidence and an expected prevalence of 1%.

b) There being an average of five swine per backyard unit in the state of Quintana Roo, at least five samples were taken per unit; or if fewer than five, all swine were sampled.

c) The sampling was done at random, regardless of whether the animals were confined or loose.

A total of 2,491 samples were collected from 33 operating commercial farms and backyard units in Quintana Roo during 1997. Of these samples, 2,348 were processed at CENASA and 143 were sent to the Regional Central Laboratory of Merida. All samples were negative in the immunoperoxidase test.

Epidemiological surveillance was carried out in 1998 at 34 operating commercial farms and at 299 backyard units as outlined below:

STATISTICAL SAMPLING AT COMMERCIAL FARMS IN THE STATE OF QUINTANA ROO, 1998
CLASSICAL SWINE FEVER

MUNICIPALITY	NAME OF FARM	SWINE POPULATION	%	SAMPLE SIZE
OTHON POMPEYO BLANCO	GRUPO LA LAGUNA	1,400	2.55	29
	GRUPO 26 DE ABRIL (¥)	0	0.00	0
	CBTA 11.	260	0.47	29
	EL LUGAR (¥)	0	0.00	0
	NUEVA VIDA (¥)	0	0.00	0
	LA CURVA (¥)	0	0.00	0
JOSE MARIA MORELOS	JESUS MARTINEZ ROSS	1,300	2.37	29
	SAN DIEGO	1,000	1.82	29
	DZIUCHE	1,200	2.19	29
FELIPE CARRILLO PUERTO	X-PICHIL	1,000	1.82	29
	SAN FRANCISCO AKE	1,000	1.82	29
	RANCHO SAN MARTIN	200	0.36	29
BENITO JUAREZ	ARIC NORTE PIE DE CRIA 1 (A)	4,034	7.36	29
	ARIC NORTE PIE DE CRIA 1 (B)	4,034	7.36	29
	ARIC NORTE PIE DE CRIA 1 (C)	4,034	7.36	29
	ARIC NORTE PIE DE CRIA 2 (A)	4,330	7.90	29
	ARIC NORTE PIE DE CRIA 2 (B)	4,330	7.90	29
	AGROPORCINA DE CANCUN (A)	720	1.31	29
	AGROPORCINA DE CANCUN (B)	720	1.31	29
	AGROPORCINA DE CANCUN (C)	720	1.31	29
	AGROPORCINA DE CANCUN (D)	720	1.31	29
	AGROPORCINA DE CANCUN (E)	720	1.31	29
	AGROPORCINA DE CANCUN (F)	720	1.31	29
	AGROPORCINA DE CANCUN (G)	720	1.31	29
	ARIC NORTE MULTIPLICADORA	3,720	6.79	29
	AGROINDUSTRIAS PALMIRA S.P.R.	620	1.13	29
	U.E.E.E. PORCIC. No. 2 LEONA VICARIO	620	1.13	29
LAZARO CARDENAS	U.E.E.E. PORCICOLA No.1 EJIDO EL TINTAL	620	1.13	29
	U.E.E.E. PORCICOLA No. 2 EJIDO EL TINTAL	620	1.13	29
	U.E.E.E. PORCICOLA No. 1 E. KANTUNILKIN	620	1.13	29
	U.E.E.E. PORCICOLA No. 2 E. KANTUNILKIN	620	1.13	29
	U.E.E.E. PORCICOLA No. 1 KM. 80 I. ZARAG.	620	1.13	29
	U.E.E.E. PORCICOLA No. 2 KM. 80 I. ZARAG.	620	1.13	29
	U.E.E.E. PORCICOLA No. 1 E. VICENTE GRO.	620	1.13	29
	U.E.E.E. PORCICOLA No. 2 E. VICENTE GRO.	620	1.13	29
	U.E.E.E. PORCICOLA No. 1 N. VALLADOLID	620	1.13	29
	U.E.E.E. PORCICOLA No. 2 N. VALLADOLID	620	1.13	29
	DELAGRO	10,500	19.15	29
	TOTAL	**54,822**	**100.00**	**957**

a) The size of the statistical sample taken at commercial farms was based on Cannon and Roe's formula (1982), assuming a 95% confidence and an expected prevalence of 10%.
b) 100% of the commercial farms were sampled.
c) 80% of the samples taken at full cycle farms were drawn from sows, 10% from boars and 10% from fattening pigs over four months old.
d) In the case of fattening farms, all samples were drawn from swine over four months old.
(*) = Empty farms
Note: In the event these farms were restocked, 29 blood serums were sampled; or, if fewer than 29, 100% of the animals were sampled.

STATISTICAL SAMPLING AT BACKYARD SWINE PRODUCTION IN THE STATE OF QUINTANA ROO
1998
CLASSICAL SWINE FEVER

MUNICIPALITY	SWINE POPULATION	%	NUMBER OF UNITS	%	NUMBER OF UNITS SAMPLED	NUMBER OF SAMPLES PER UNIT	TOTAL SAMPLES PER MUNICIPALITY
OTHON POMPEYO BLANCO	17,640	33.08	4,450	33.09	99	5	495
JOSE MARIA MORELOS	9,450	17.72	2,050	15.24	46	5	230
FELIPE CARRILLO PUERTO	9,100	17.06	2,125	15.80	47	5	235
BENITO JUAREZ	1,460	2.74	1,050	7.81	23	5	115
LAZARO CARDENAS	7,680	14.40	1,725	12.83	38	5	190
ISLA MUJERES	430	0.81	175	1.30	4	5	20
SOLIDARIDAD	7,570	14.19	1,875	13.94	42	5	210
TOTAL	**53,330**	**100.00**	**13,450**	**100.00**	**299**		**1,495**

a) The size of the statistical sample taken in backyard units was based on Cannon and Roe's formula (1982), assuming a 95% confidence and an expected prevalence of 1%.
b) There being an average of five swine per backyard unit in the state of Quintana Roo, at least five samples were taken per unit; or, if fewer than five, all swine were sampled.

Some 957 commercial farm samples and 1,148 backyard unit samples have been processed in1998, bearing negative results. Sampling shall continue until the pending 347 samples have been collected from backyard units.

Furthermore, in eradication and free zones, serological surveys are conducted by means of immunoperoxidase, ELISA, seroneutralization and viral isolation tests, in order to detect evidence of CSF. For a final or confirmative diagnosis, the viral antigen must be identified by a direct immunofluorescence test performed on tonsils, spleen and lymph nodes, and an indirect immunofluorescence test on tonsils, spleen, lymph nodes and kidney (items 7.3.1 and 8 of Mexican Official Standard NOM-037-ZOO-1995, National Campaign against Classical Swine Fever).

Passive Surveillance

Since 1994, in Mexico there is a list of diseases subject to mandatory notification (Agreement published in the Federal Official Gazette of September 21, 1994, listing exotic diseases and pests that might affect the United Mexican States). This agreement was recently revised and updated as Agreement listing exotic and enzootic pests and diseases subject to mandatory reporting in the United Mexican States, published in the Federal Official Gazette of March 5, 1999. These diseases include those considered exotic to Mexico, as well as enzootic diseases, which must be reported immediately and on a monthly basis.

Moreover, persons and instances in charge of notifying evidence of these animal diseases are defined in items 1 and 7.1.1. of Mexican Official Standard NOM-046-ZOO-1996, National Epidemiological Surveillance System.

Once central authorities receive the information, it is processed and analyzed by the National Epidemiological Surveillance System, and published in the monthly bulletin. Likewise, weekly, monthly and yearly reports on OIE List A, B and C diseases are issued to this agency, as well as to other international agencies (the Pan American Health Organization, the Inter-American Institute for Agricultural Cooperation, and the International Regional Animal Health Organization).

In the event of an outbreak, a positive serological test or viral isolation done in a laboratory, it is the obligation of the swine owner, as well as of the authorized veterinarian and/or person in charge of the farm or laboratory, as the case may be, to advise SAGAR.

III. DIAGNOSTIC LABORATORY CAPACITY

There are three animal health diagnosis laboratories in the state: the Subteniente Lopez Animal Health Center, the Felipe Carrillo Puerto Animal Health Center, and the Kantunilkin Animal Health Center, which are qualified to diagnose brucellosis, perform parasitological, serological and clinical tests. The service areas of these laboratories are the following:

LABORATORY	SERVICE AREA	DIAGNOSIS
Subteniente Lopez	Statewide	Brucellosis, parasitological, serological and clinical tests
Felipe Carrillo Puerto	Felipe Carrillo Puerto RDD	Brucellosis, parasitological, serological and clinical tests
Kantunilkin	Cancun RDD	Brucellosis, parasitological, serological and clinical tests

CSF epidemiological surveillance in Quintana Roo also relies on CENASA and the Regional Central Laboratory of Merida for diagnoses of this swine disease.

IV. STATUS OF THE DISEASE

The last CSF outbreak in the state occurred in 1980, in the villages of Chiquila and Holbox, in the municipality of Lazaro Cardenas: 30 of roughly 100 backyard swine died at the time. The disease was diagnosed at the Regional Central Laboratory of Merida in Yucatan.

Counter-epizootic steps applied during the outbreak consisted of vaccinating the swine in the focal zone, implementing active epidemiological surveillance, and movement limitation of animals and their products. Vaccination was suspended in November of 1994 in all swine farms throughout the state, whereupon the state officially entered the eradication phase.

The state's official release from this disease was published in the Federal Official Gazette, June 11th, 1996.

V. STATUS OF VACCINATION IN THE REGION

Because the state of Quintana Roo is a free state, pursuant to item 6.7 of NOM-037-ZOO-1995, National Campaign against Classical Swine Fever, CSF vaccines have been neither commercialized nor used there since 1994.

Vaccination is not practiced in Yucatan or Campeche either, pursuant to the above-mentioned Mexican Official Standard.

VI. STATUS OF THE DISEASE IN ADJACENT REGIONS

Yucatan has been free from CSF as of April 1st, 1995, and Campeche's official release was published in Mexico's Federal Official Gazette on December 18, 1997. Active and ongoing CSF epidemiological surveillance continues in both states.

VII. PHYSICAL SEPARATION OR OTHER BARRIERS BETWEEN QUINTANA ROO AND REGIONS AT HIGHER-RISK

The state of Quintana Roo is flanked on the north and northwest by Yucatan, on the west by Campeche, and on the south and southeast by Belize and Guatemala. Natural barriers are the Gulf of Mexico to the north, the Caribbean to the east, and the Hondo River to the south bordering on Belize.

As for physical man-made barriers, Mexico's **National Agricultural Quarantine System** marshals numerous checkpoints that limit animal and animal product movement. The purpose of this system is to provide a comprehensive and institutional strategic basis for the application of quarantine services, implemented to protect Mexico's agricultural, forestry and livestock resources, by preventing entry of exotic pests and diseases, controlling and eradicating them if these should arise, supporting nationwide plant and animal health campaigns, and keeping animal and plant pests and diseases out of free zones.

The National Agricultural Quarantine System provides external and internal quarantine services. The external quarantine division performs all activities addressed at preventing diseases from entering the country, whereas the internal quarantine division is responsible for preventing diseases that already exist in Mexico from spreading to free areas.

Internal Quarantine

This service consists of internal checkpoints where animals and agricultural products undergo inspection prior to being transferred from one location to another. Compliance with official standards is also verified, to thus guarantee that such movements do not involve any animal health risk.
Certain inspection stations, besides providing this service, also operate as cattle dips, where animals are given tick baths, and can be monitored in the event of an animal health emergency.

Personnel at the following inspection stations monitor animals, and agricultural products and byproducts entering and leaving the state of Quintana Roo:

NAME	LOCATION	NUMBER OF INSPECTORS
Caobas	Limite con X-Pujil, Camp.	12
Cocoyol	Ribera del Rio Hondo	3
Subteniente Lopez*	Crucero a Belice	10
Tres Garantias	Entronque a Tomas Garrido	3
Felipe Carrillo Puerto	Felipe Carrillo Puerto	3
Dziuche	Limites con Santa Rosa, Yuc.	4
Tepich	Limites con XTobil, Yuc.	4
Nuevo Xcan	Limites XCan, Yuc.	6
Quintana	Limites con La Sierra, Yuc.	3
Cedral	Limites Popolnah, Yuc.	3

*Quarantine station

Note: All personnel posted at inspection stations are attached to SAGAR and to the CFPP.

The system's regional quarantine lines ensure further protection of disease-free regions.

These quarantine lines consist of 46 checkpoints or quarantine stations over a region covering several states with related plant and animal health characteristics, which due to their geographic location, communication routes and agricultural traffic, require that plant, animal, and agricultural products and byproduct transports be properly monitored.

All peninsula states, including Quintana Roo, are protected by the **Peninsula-Tabasco Quarantine Line**, formed by the following inspection stations:

PENINSULA-TABASCO REGION QUARANTINE LINE

NAME	LOCATION
Tonala	Km. 132 on Federal Highway 180 from Villahermosa to Coatzacoalcos
Francisco Rueda	Km. 90 on the State Highway from Huimanguillo to Chiapas
San Manuel	Village of San Manuel on the highway to Chimea, Chiapas
Amacohite	Km. 40 on Federal Highway 187 from Huimanguillo to Malpaso, Chiapas
Azufre	Km. 80 on Highway 195 from Villahermosa to Pichucalco, Chiapas
Boca de Limon	Km. 30 on the State Highway from Villahermosa to Reforma
Tulija	Km. 79 on Federal Highway 186 Municipality of Macuspana
Corralillo	Km. 100 on Federal Highway 186, Junction Municipality of Jonuta
Libertad	Km. 4 on the highway from E. Zapata to Tenosique
Gregorio Mendez	Km. 43 on the highway from E. Zapata to Tenosique

It is important to point out that when a state enters the classical swine fever eradication phase, the General Bureau of Animal Health advises the airlines to refrain from serving menus containing pork products on their flights bound to airports in the free states.

External Quarantine

External quarantine, also considered a first sanitary barrier, aims to prevent passage of pests and diseases to other countries. Inspectors posted at ports, airports and borders take preventive action.

Inspectors are stationed at the following locations in Quintana Roo:

Inspection Station	Border	Airport	Port
Subteniente Lopez, Q Roo	*		
Chetumal, Q Roo		*	
Cancun, Q Roo		*	
Playa del Carmen, Q Roo			*
Cozumel, Q Roo [1]		*	*
Isla Mujeres, Q Roo [1]		*	
Puerto Morelos, Q Roo [1]		*	*

[1] Satellite inspection stations

The inspection station at Subteniente Lopez is located on the Belizean border, where plant and animal health documents are strictly inspected and verified. Likewise, pork products entering the state by boat, chiefly bound for Cancun, undergo inspection at Puerto Morelos, where no international port authorities are stationed, because Puerto Morelos is not a commercial port; the only docking facilities are marinas.

VIII. CONTROL OF MOVEMENTS OF ANIMALS AND ANIMAL PRODUCTS FROM HIGHER RISK REGIONS

Movement of swine, and pork products and byproducts is subject to restrictions set down in regulations specified by SAGAR.

Movement

The state imports pork products and byproducts made and shipped from TIF plants in the states of Aguascalientes, Chiapas, Michoacan, Nuevo Leon, Sonora, Tamaulipas, Yucatan and the Federal District. It might be mentioned that these byproducts are subject to regulations set down in Mexican Official Standard NOM-037-ZOO-1995, National Campaign against Classical Swine Fever and in NOM-007-ZOO-1994, National Campaign against Aujeszky Disease.

Some 127,324 swine were moved toward the state from 1996 through December of 1998; 37,216 in 1996; and 42,900 in 1997, of which 12 were not admitted, because they were coming from a control zone. Some 47,208 swine from the state of Yucatan alone were moved in 1998.

Swine from Yucatan are currently being admitted, because equal animal health conditions prevail in both states.

As for vehicles sprayed, 12,407 were disinfected in 1996; 13,124 in 1997; and 13,566 in 1998.

Some 110,602 animals, 84,726 animals and 63,126 animals were inspected in 1996, 1997 and 1998, respectively.

Swine movements recorded at plant and animal health inspection stations from 1994 to 1998, are detailed below:

Year	External Movement	Internal Movement
1994	13,621	1
1995	21,684	110
1996	37,216	1,890
1997	42,900	861
1998	47,208	247
Total	**162,629**	**3,109**

Records state that 3,554 kilograms of waste off of commercial flights from Central America and the Caribbean were incinerated at the Chetumal airport in 1997. No waste was reported in 1998.

The inspection station in Cancun, including its satellite stations in Isla Mujeres, Cozumel and Puerto Morelos recorded a total of 2,889.35 kilograms of waste from commercial and charter flights incinerated in 1997. Up until December of 1998 the incinerated waste reported by these inspection stations had dropped to 526.45 kilograms, due to passenger awareness aroused by signage posted around the inspection stations, regarding the region's sanitary status.

No waste off boats was recorded at Playa del Carmen, Cozumel or Puerto Morelos inspection stations, since no unloading is allowed. Food waste is incinerated directly onboard.

IX. ANIMAL DEMOGRAPHICS AND MARKETING PRACTICES IN THE REGION

In the state of Quintana Roo, there are currently 38 commercial farms (4 empty), of which 80% are fattening farms and 20% raise breeding stock. The production inventory amounts to 54,822 head of swine and 53,330 backyard swine distributed throughout the state.

Producers market their product directly to the suppliers. Business is seldom done through middlemen in the region.

Quintana Roo's largest customer for swine and pork products is Cancun. This demand, as mentioned in section VIII, requires that pork be purchased from authorized TIF plants operating in other states of the Mexican Republic.

Furthermore, the Rural Association of Collective Interests Association (ARIC[4]) has an assembly point in Chetumal, where 80% of the local demand is met. Another swine consortium called DELAGRO, which does business in both Campeche and Yucatan, distributes refrigerated carcass meat from Yucatan in Quintana Roo.

X. EMERGENCY RESPONSE CAPACITY

State Animal Health Emergency Groups (GEESA).- The regional GEESA was established in June of 1995, and is made up of 36 veterinarians from the states of Yucatan, Campeche and Quintana Roo.

Training.- In June of 1997, 42 technicians received training in epidemiological surveillance. These technicians were drawn from the following sources in Yucatan, Campeche and Quintana Roo: the offices of SAGAR's state delegates, the state governments, the pork and poultry livestock producer associations, animal health and zoological diagnosis laboratories, the regional GEESA group, state livestock promotion and protection committees, coordinators of the National Campaign for the Eradication of Bovine Tuberculosis and Brucellosis, certified veterinarians and free practitioners.

[4] TN: The Association's Spanish acronym