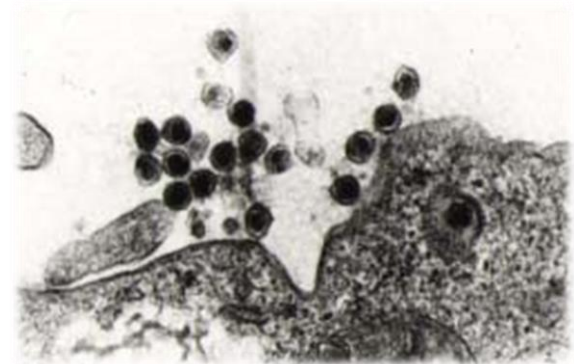
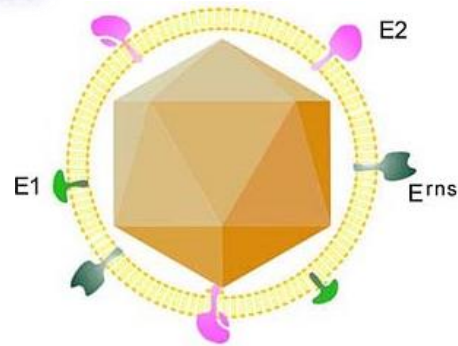
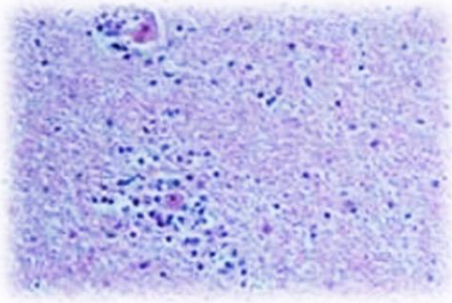


HISTORICAL ERADICATION PROCESS OF CLASSICAL SWINE FEVER IN MEXICO



Classical Swine Fever



ZOOSANITARY CAMPAIGNS DIRECTORATE

- The Directorate of Zoosanitary Campaigns (DCZ acronym in spanish) is responsible for establishing the set of measures and sanitary actions that are carried out to **prevent, detect, combat and eradicate diseases or pests that affect animals** and that are of economic interest in the country.
- Among its objectives is: to **determine, coordinate and evaluate activities and technical and administrative measures for the diagnosis, prevention, control and eradication** of bovine tuberculosis, brucellosis of animals, bovine paralytic rabies, *Boophilus sp.* cattle ticks.
- Erradicated diseases: Classical Swine Fever (2012 DOF), Aujeszky's Disease (2015 DOF), Avian Salmonellosis and Newcastle Disease.

CSF Antecedents

- In 1877 it was introduced to the country through an import of pigs from the USA.
- 1973, initiates the Regional Program for the Control and Eradication of Hog Cholera for the states of the northwest.
- 1978, initiates the National Campaign for the Eradication of Hog Cholera.
- 1983, **56 municipalities** of northern Sonora were declared free of Hog Cholera, and in 1991 **the entire state**.
- 1992 The name of the Hog Cholera (HC) Program changes to Classical Swine Fever (CSF) (DOF 28/09/92).
- 1996 National Campaign Against Classical Swine Fever (10/26/96) is published in DOF (26/10/96).

Strategies



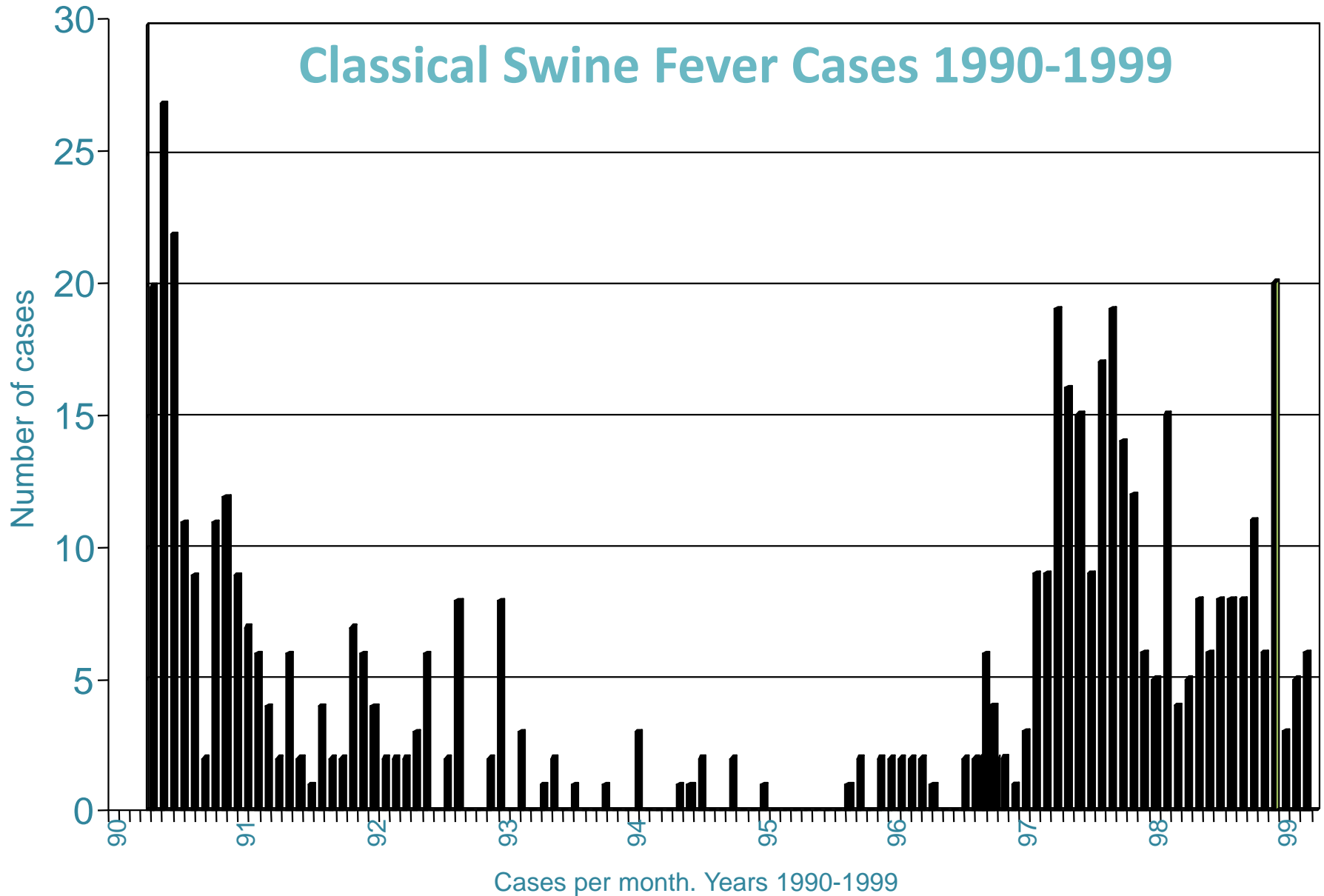
Regionalization:

North, Northeast, Center-West, South Center, Isthmus and Peninsular

Actions:

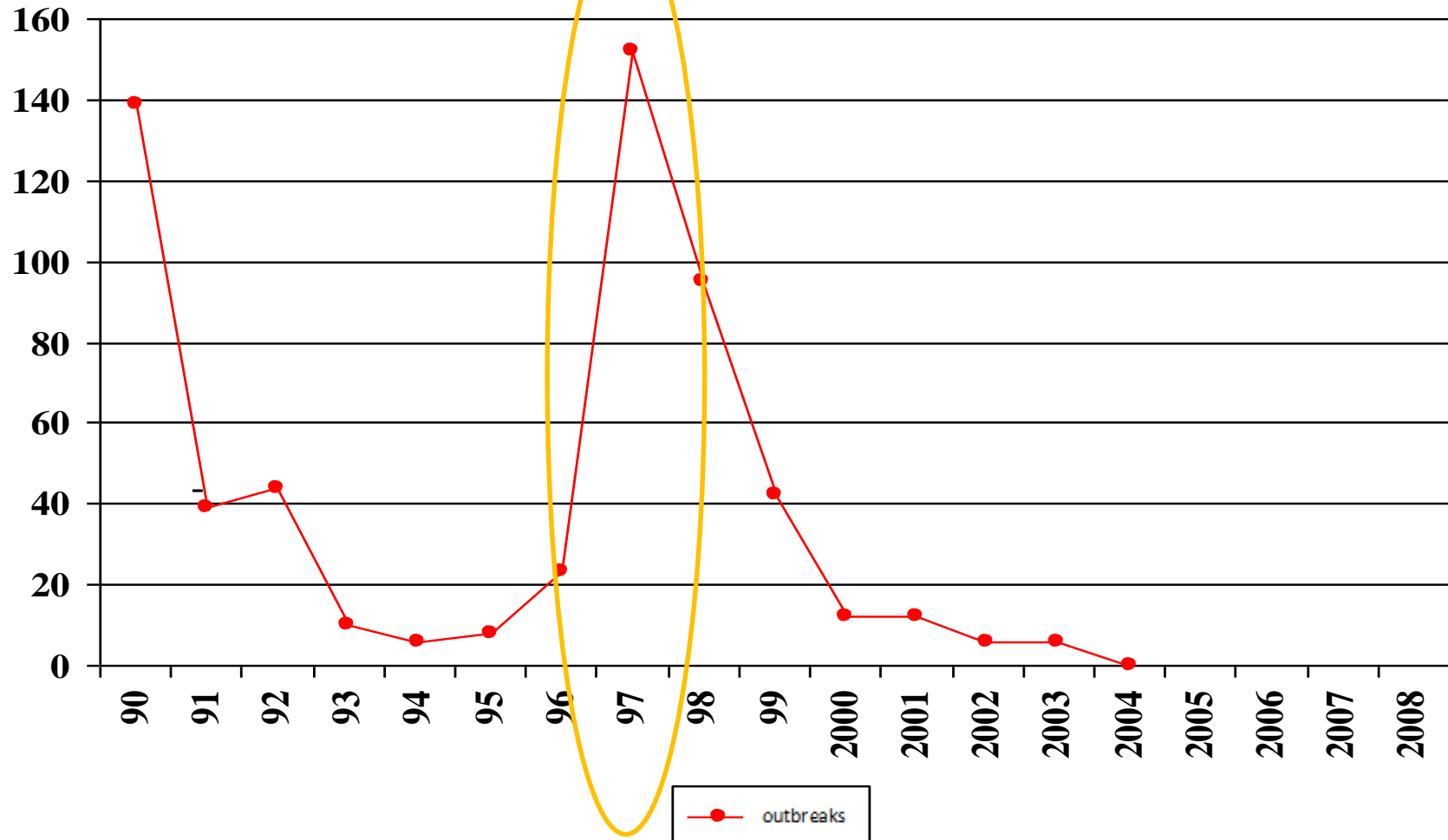
- ✓ Preparation and application of the regulations of the campaign.
- ✓ Participation of Auxiliary Organizations.
- ✓ Strengthening of the National Epidemiological Surveillance System.
- ✓ Improvement in infrastructure, diagnostic techniques and biological control.
- ✓ Operation of the Program of Approved Veterinarians.

Classical Swine Fever Cases 1990-1999



Classical Swine Fever Outbreaks 1990-2004

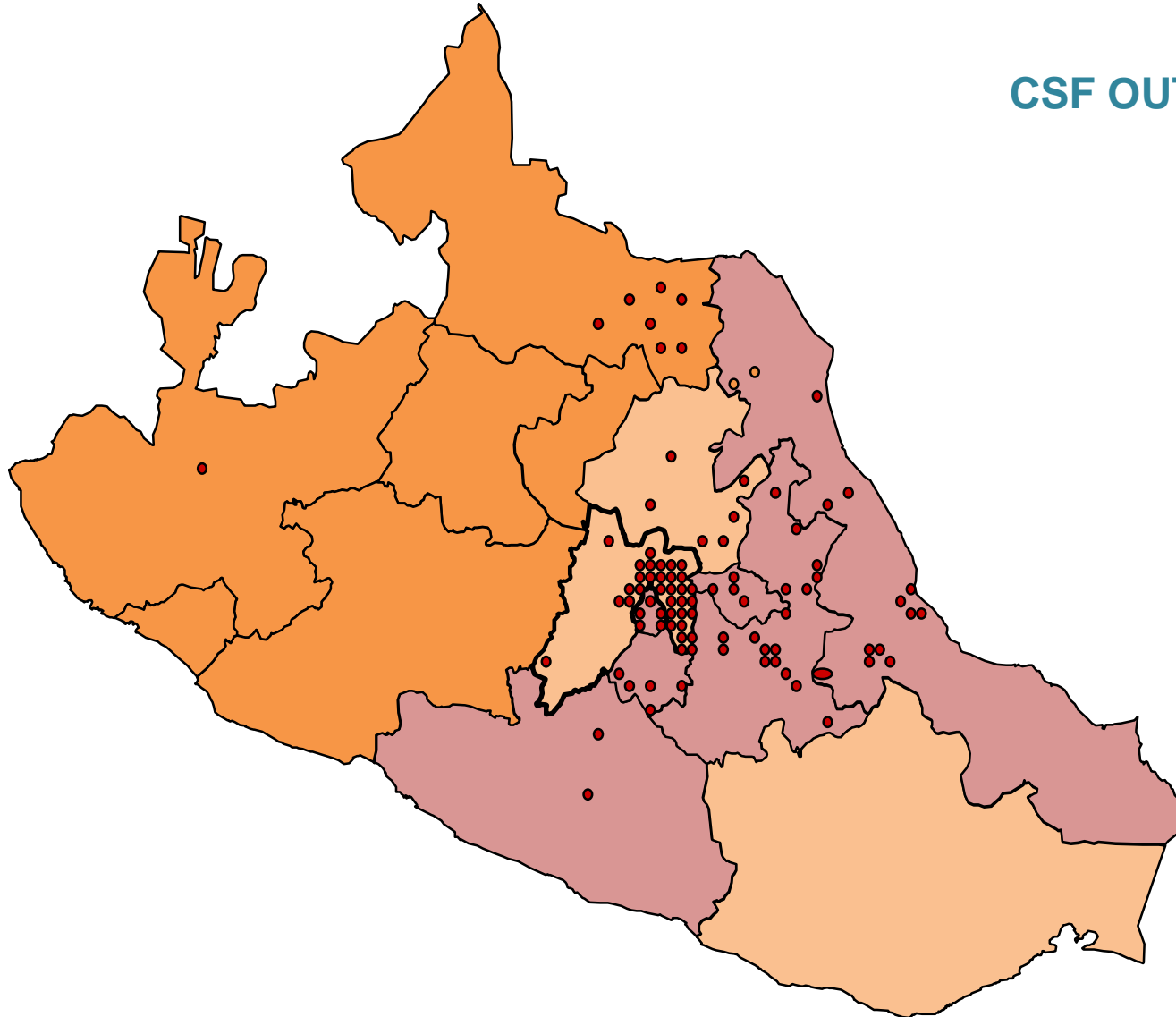
Number of outbreaks



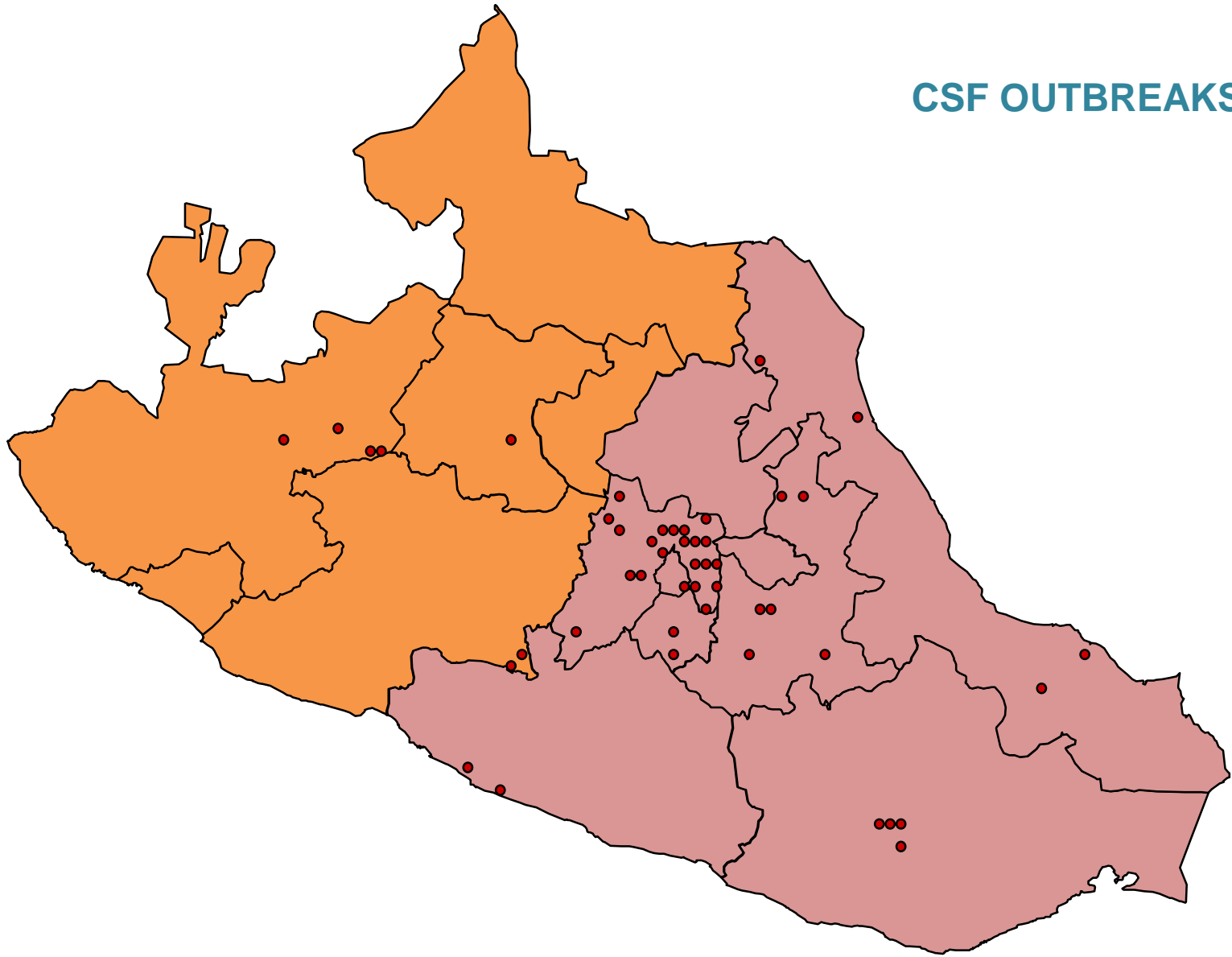
Outbreak detection

- In 1996 stopped vaccination in the eradication zone (Bajío).
- In 1997 was an increase in outbreaks (Jan-Dec). 150 outbreaks, mainly in backyard pigs (87%).
- At the end of 1997, CSF outbreaks started again within the Eradication zone.

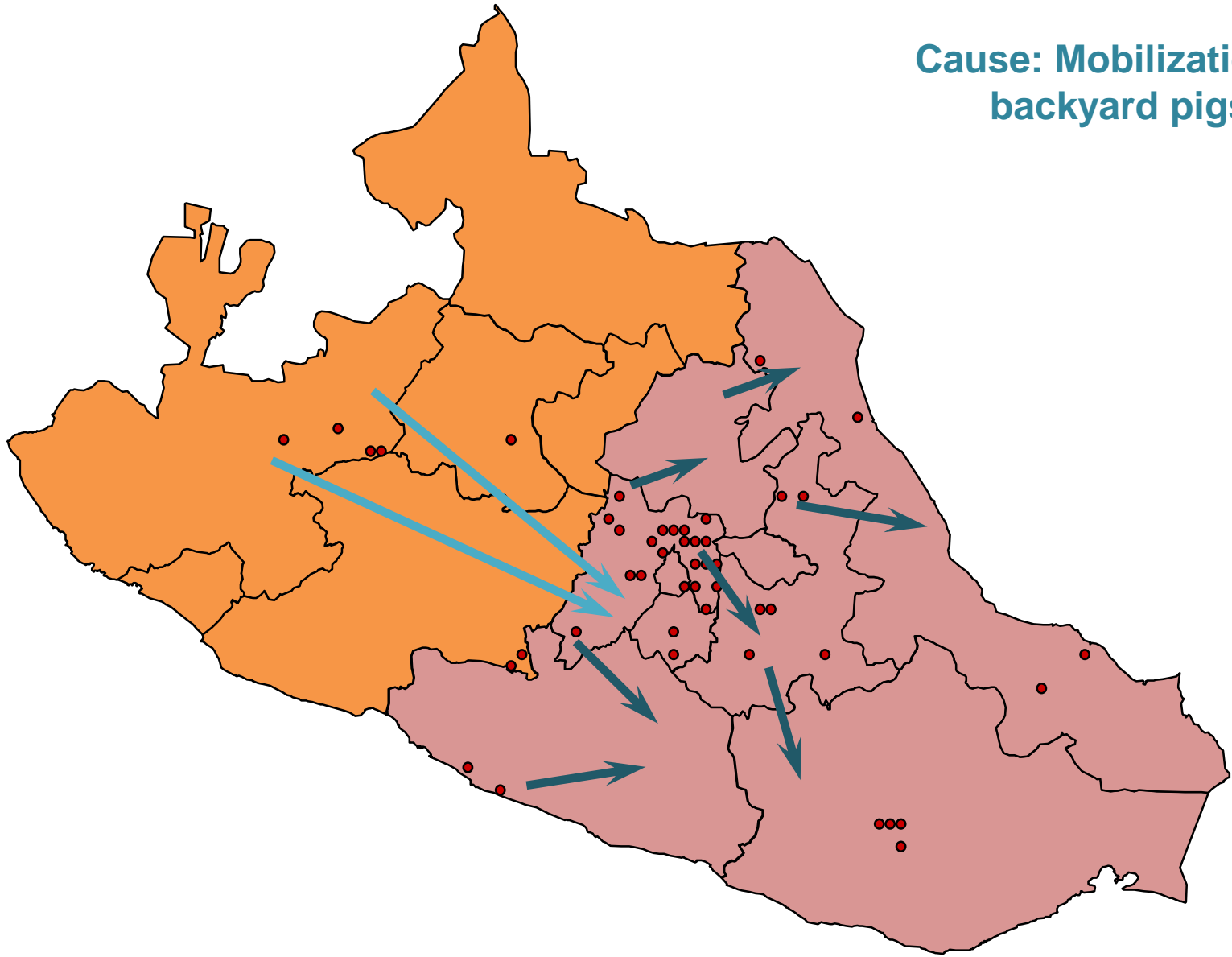
CSF OUTBREAKS 1997



CSF OUTBREAKS 1998



Cause: Mobilization of backyard pigs



Risk factors that promoted the movement of CSF virus

- The entry of unvaccinated animals to the commercialization chain of backyard pigs in the control zone (**87% of the outbreaks**).
- The virus spread to commercial farms from backyard farms (**13% of outbreaks**).
- The virus returned to the eradication zone due to traders buying pigs in endemic areas and introduced them into **backyard areas in Guanajuato, Jalisco and Michoacán**.

Ante mortem lesions



Cianosis y
eritema de la
cara.



Cianosis distal
en las orejas.



Eritema y
hemorragias
petequeales
en abdomen.



Cianosis
en la zona
medial de las
extremidades
y canal interna
de los muscos.

Post mortem lesions

Lesiones post-mortem:
Congestión y hemorragias en intestino.



Lesiones post-mortem:
Congestión y aumento de tamaño de ganglios linfáticos mesentéricos.



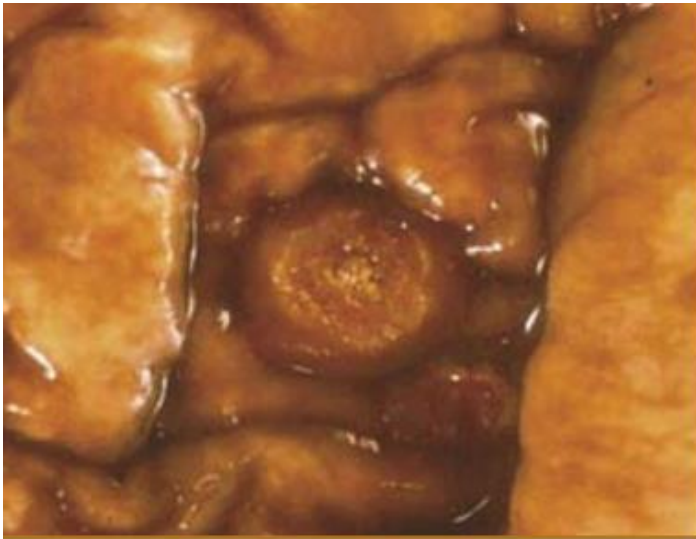
Infartos marginales en el bazo.



Hemorragias petequiales en vesícula biliar.

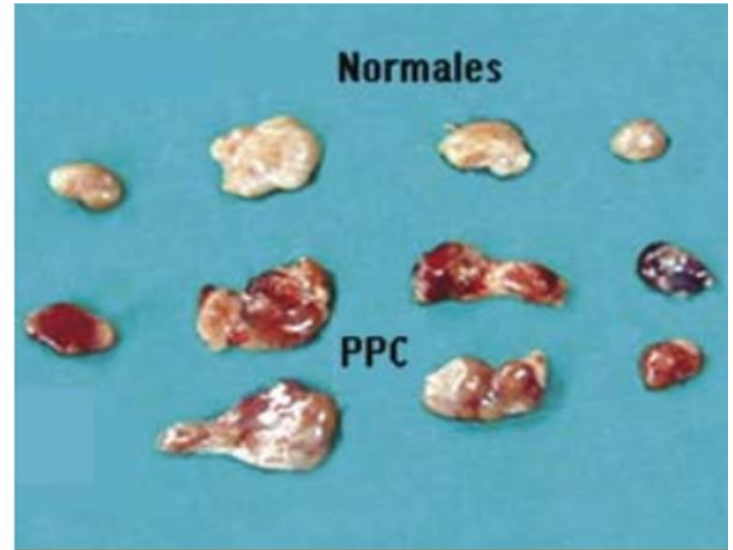


Post mortem lesions



Lesiones post-mortem:
Úlcera botonosa.

Composición gástrica que muestra estado de los ganglios linfáticos (congestión, hemorragias, aspecto mamóreo) de animales enfermos respecto a los normales.



Lesiones post-mortem:
Congestión y aumento de tamaño de ganglios linfáticos inguinales.

Congestión y hemorragias en vejiga urinaria.



- However, the virus had a different behavior: its clinical signs were not evident from infection.
- The lesions were not characteristic.
- It was not mortal, but it spread slowly in herd.
- Therefore, the laboratory diagnosis by Immunofluorescence was very important.

Diagnosis

Diagnostic network of rapid response:

- CENASA
- CPA
- El Salto, Jalisco
- La Piedad, Michoacán
- Irapuato, Guanajuato
- Calamanda, Querétaro

- Approved laboratories:
 - Sonora, Nuevo León Yucatán, Chihuahua, etc. (26 laboratories.)



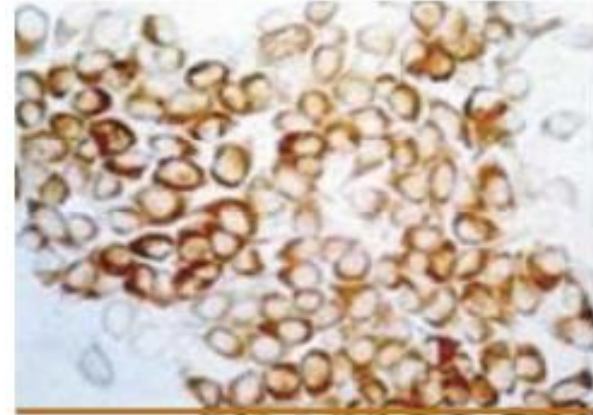
Diagnosis

Tests (organs)

1. DIRECT IMMUNOFLUORESCENCE
2. VIRAL ISOLATION

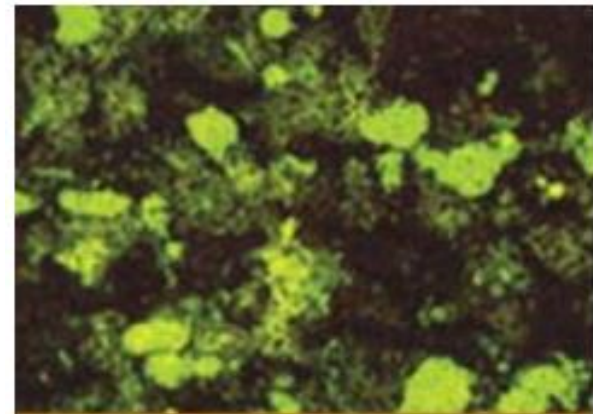
Sample

1. TONSIL, SPLEEN AND LYMPHATIC NODES
2. TONSIL, SPLEEN, LYMPHATIC NODES, KIDNEY



IFD positiva
en cultivo
de células
infectadas.

U
O



IFD positiva
en corte
criostático de
ganglio.

Tests (serum)

IMMUNOENZYMATIC ASSAY (ELISA)

IMMUNOPEROXIDASE

Sample

SERUM

YELLOW CLEAR, TRANSLUCENT, ABSENCE OF SUSPENDED PARTICLES, ODORLESS

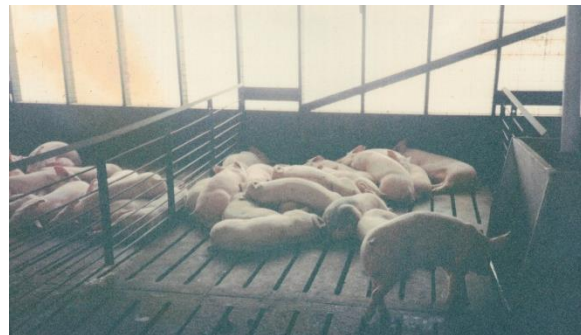


5 ml
serum

Classical Swine Fever in Technified farms



Clinical signs



Culling - Depopulation



Sanitary disposal-burying



Burying



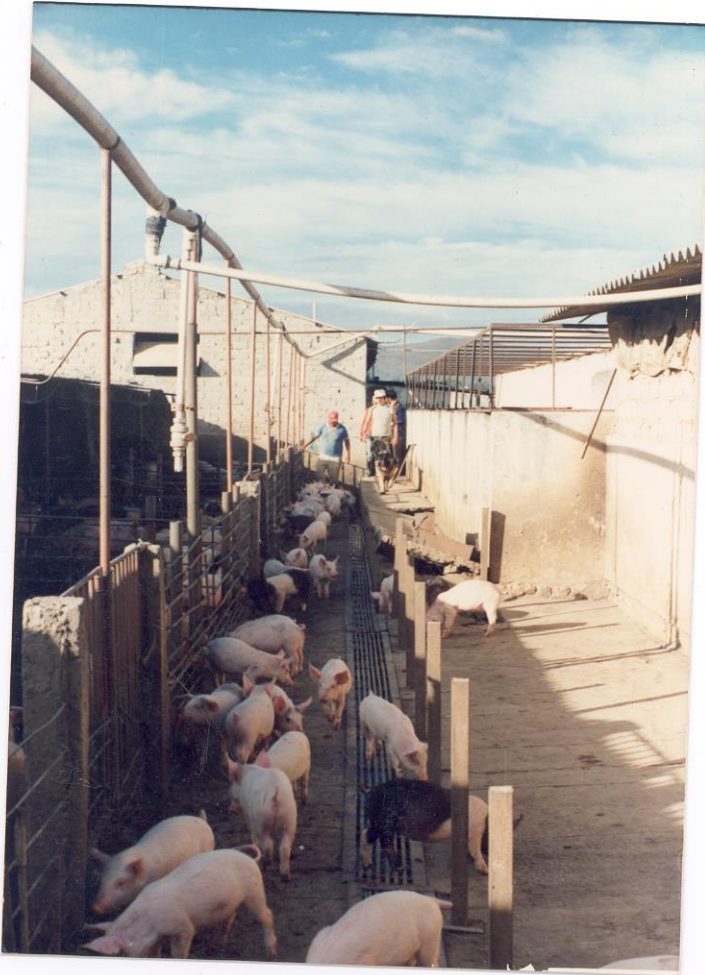
Sanitary disposal



Cremation



Depopulation



Culling



Actions



Due to the increase in outbreaks, on December 18, 1997, the National Emergency Mechanism for Animal Health was expanded.

Vaccination actions were coordinated against CSF in backyard and technified swine farms in the states of the South-Center and the Center-West.

These actions led to a reduction in the number of outbreaks, concluding their actions in 1999.

Actions

Intensive vaccination

- In areas of higher porcine density.
- Registered a cost greater than 15 million dollars per year.



Biological products against CSF

High-pass vaccines derived from the Chinese, GPE, CL, CR20, Minnesota, PAV-1, PAR-147 and **PAV-250** strains were developed from the 1950s, which were used more or less frequently, and with successful results.

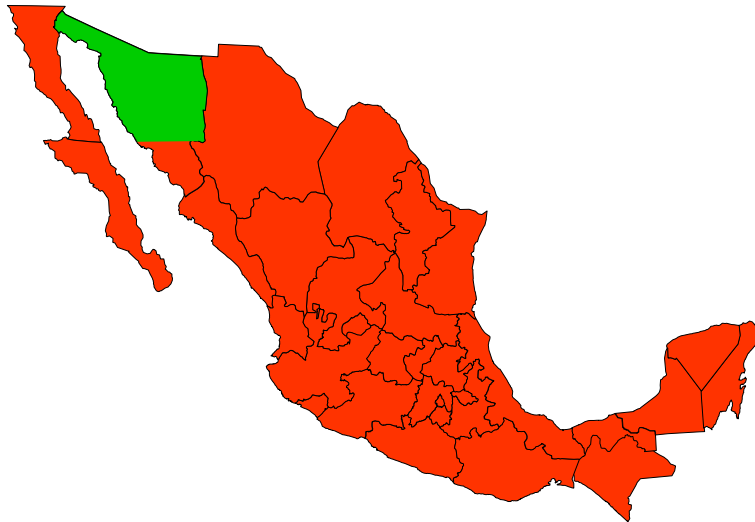
VACCINE NAME	VACCINE TYPE	PRODUCER LAB	STRAIN
Clasivac Plus	Modified live virus	PRONABIVE	GPE
Colvasan	Modified live virus	SANFER	PAV-250
Porcivac	Attenuated live virus	HOECHST	PAV-1
Norvac GPE	Modified live virus	NORDEN	GPE
Vadimun	Attenuated live virus	NORDEN	China
Ingelvac	Modified live virus	ANCHOR	Minnesota
Certigen	Modified live virus	SYNTEX	Minnesota
Certivong	Modified live virus	SYNTEX	China Lapinizada
Vacuna contra la FPC	Modified live virus	BIO-ZOO	PAR-147
PAV-Plus-250	Modified live virus	PRONABIVE	PAV-250



Dr. Pablo Correa Girón (rip)

Chronological advance

1983



● 56 Municipalities of Sonora,
free of CSF

1991 - 1994



■ Free
■ Control

● Enter the free phase
Northwest Region and
Chihuahua

Chronological advance

1995 – 1998 (NOM-037-ZOO-1995)

1999 - 2001



● Enter the free phase Northeast and Peninsula Regions



● Free
● Eradication
● Control

● Enter the free phase Durango and Nayarit

Chronological advance

2002-2006

2007



● Enter the free phase
Central West Region

- Free
- Eradication
- Control



● Enter the free phase
Veracruz, Puebla, Tlaxcala
and Guerrero

Chronological advance

2008



● Enter the free phase the states of México, Morelos and Distrito Federal

■ Free
■ Eradication

2009



● Enter the free phase Oaxaca, Chiapas y Tabasco

Eradication 2012

With the publication of the Agreement that declares the United Mexican States as free of Classical Swine Fever on **August 14, 2012.**



● Free



Eradication impact

National

- Were benefited more than **979 thousand** Swine Production Units.
- Protects the pig census with more than **16.2** million heads.
- Production value of **81 billion** pesos.
- The source of **350,000** direct jobs and more than **1.7** million indirect jobs is preserved.
- Benefit more than **2 million** families in the production, industrialization and commercialization of the National Pork Industry.
- Larger opening for the national and international livestock market.
- Larger perspective on investment in the pork sector.
- Improvement of production perspective of **1.3 million** tons of annual meat.
- Investment opportunity in the productive chain.
- Added value to the export of **87 million** tons of pork meat with an annual catch of 400 million dollars.

To date, Surveillance is maintained as an Exotic Disease



Eradication impact

International Certification of Mexico as Free of Classical Swine Fever by the OIE
(**may 28, 2015**)



Eradication impact

International

On **January 16, 2018**, Recognition of the Mexican Territory as free of Classical Swine Fever by the US Department of Agriculture (USDA).



2131

Notices

This section of the FEDERAL REGISTER contains documents other than rules or proposed rules that are applicable to the public. Notices of hearings and investigations, committee meetings, agency decisions and rulings, delegations of authority, filing of petitions and applications and agency statements of organization and functions are examples of documents appearing in this section.

DEPARTMENT OF AGRICULTURE
Animal and Plant Health Inspection Service
[Docket No. APHIS-2016-0038]

Notice of Determination of the Classical Swine Fever Status of Mexico
AGENCY: Animal and Plant Health Inspection Service, USDA.
ACTION: Notice.

SUMMARY: We are advising the public of our determination that Mexico is free of classical swine fever (CSF). Based on our evaluation of the animal health status of Mexico, which we made available to the public for review and comment through a previous notice, the Administrator has determined that CSF is not present in Mexico and that live swine, pork, and pork products may safely be imported into the United States from Mexico subject to conditions in the regulations.

DATES: This change in disease status will be recognized on January 16, 2018.

FOR FURTHER INFORMATION CONTACT: Dr. Chip Wells, Senior Staff Veterinarian, Regionalization Evaluation Services, National Import Export Services, VS, APHIS, USDA, 4700 River Road, Unit 38, Riverdale, MD 20737-1231; Chip.J.Wells@aphis.usda.gov; (301) 851-3317.

SUPPLEMENTARY INFORMATION: The Animal and Plant Health Inspection Service (APHIS) of the United States Department of Agriculture (USDA) regulates the importation of animals and animal products into the United States to guard against the introduction of animal diseases not currently present or prevalent in this country. The regulations in 9 CFR part 94 (referred to below as the regulations) prohibit or restrict the importation of specified animals and animal products to prevent the introduction into the United States of various animal diseases, including

classical swine fever (CSF), foot-and-mouth disease, swine vesicular disease, and rinderpest. These are dangerous and communicable diseases of ruminants and swine.

The regulations in § 94.32 specify conditions for the importation of live swine, pork, and pork products from certain regions that APHIS currently recognizes as CSF-free but whose products may be at risk of commingling with products from CSF-affected regions due to common land borders or other factors. The conditions for such imports include, among others, a requirement for certification by a full-time salaried veterinary officer of the national government of the region of export that the pork or pork products originated in a CSF-free region, requirements that the pork or pork products be derived only from swine that were born and raised in such a region and never lived in a CSF-affected region, a prohibition against the comingling of the pork or pork products with pork or pork products that have been in an affected region, and a requirement that any processing of the pork or pork products be done in a federally inspected processing plant in a CSF-free region.

The regulations in 9 CFR part 92 contain requirements for requesting the recognition of the animal health status of a region or for the approval of the export of a particular type of animal or animal product to the United States from a foreign region. If, after review and evaluation of the information submitted in support of the request APHIS believes the request can be safely granted, APHIS will make its evaluation available for public comment through a notice published in the **Federal Register**. Following the close of the comment period, APHIS will review all comments received and will make a final determination regarding the request that will be detailed in another notice published in the **Federal Register**.

In response to a series of requests submitted by the Government of Mexico between 2007 and 2009, we conducted a qualitative risk evaluation to evaluate the CSF status of Mexican States other than the nine States already recognized at that time as CSF-free. The resulting risk evaluation document, "APHIS Evaluation of the CSF Status of a Region in Mexico" (referred to below as the "2013 risk evaluation"), did not support

Federal Register
Vol. 83, No. 10
Tuesday, January 16, 2018

CSF-free recognition of all of Mexico; however, it did support access to the U.S. domestic market under certain risk-mitigating conditions. Based on the findings of the 2013 risk evaluation, on July 29, 2014, we published in the **Federal Register** (79 FR 43974-43980, Docket No. APHIS-2013-0061) a proposal¹ to amend the regulations by recognizing a new APHIS-defined low-risk CSF region consisting of all Mexican States except the nine CSF-free States and the State of Chiapas, which we did not recognize as CSF-free.

In February 2015, Mexico received notice that the World Organization for Animal Health (OIE) recognized the country as CSF-free. Citing the OIE decision, the Government of Mexico then requested that APHIS suspend its rulemaking and instead continue evaluating Mexico for CSF-free status.

In response to this request, APHIS reopened its evaluation of the CSF status of Mexico. This reevaluation incorporated findings from a 2015 APHIS site visit report, along with updated surveillance data and other information submitted by Mexico. These findings are documented in an April 2016 addendum to the 2013 risk evaluation.

On August 8, 2017, we published in the **Federal Register** (82 FR 37043-37044, Docket No. APHIS-2016-0038) a notice² in which we announced the availability for review and comment of the April 2016 addendum to the 2013 risk evaluation. In the addendum, we presented the results of our updated evaluation of the risk of introducing CSF into the United States via the importation of live swine, pork, and pork products from Mexico.

We solicited comments on the notice for 60 days ending on October 10, 2017. We received one comment by that date, from a domestic pork industry group.

The commenter supported our conclusion, as stated in the addendum, that the risk of introduction of CSF into the United States via the importation of live swine, pork, and pork products from Mexico is very low. Referencing a recommendation by our site visit team

¹ To view the 2013 risk evaluation, the proposed rule, and the comments we received, go to <http://www.regulations.gov/#/docketDetail;D=APHIS-2013-0061>.

² To view the notice, the addendum, and the comment we received, go to <http://www.regulations.gov/#/docketDetail;D=APHIS-2016-0038>.

“We may live without poetry, music and art,

We may live without conscience and live without heart;

We may live without friends; we may live without books;

But civilized man can not live without cooks.

He may live without books,—what is knowledge but grieving?

He may live without hope—what is hope but deceiving?

He may live without love,—what is passion but pining?

But where is the man that can live without dining?

Lucillé (1860). Owen Meredith





SENASICA

Servicio Nacional de Sanidad, Inocuidad y Calidad Agroalimentaria