

# Master of Public Health Public Health Field Experience



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Kansas State University  
Summer 2008

# Goals

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- Foot and mouth disease
  - Introduction through Hemispheric FMD Eradication Program
  - FMD epidemiology
  - FMD eradication and control programs

# Goals

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## □ Public health

- Introduction to public health on national and international levels
- Governmental and non-governmental organizations

# Buenos Aires, Argentina

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- ▣ Weeklong Spanish language training



**Plaza de Mayo**

# Rio de Janeiro, Brazil

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- ▣ RIMSA 15 Conference
- ▣ PANAFTOSA



# MPH Supervisor

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▣ David Ashford, USDA-APHIS



# RIMSA 15

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- ▣ Inter-American Meeting at Ministerial Level on Health and Agriculture
- ▣ Theme: Agriculture and Health: Alliance for Equity and Rural Development in the Americas

# RIMSA 15

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- ▣ Speakers from Canada to Uruguay
- ▣ Topics ranged from human healthcare in rural areas to agrotourism and ecotourism to health and animal production in Brazil and South America



# GEIFA

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- ❑ International working group for the eradication of foot and mouth disease
- ❑ Phil Bradshaw, President



# PANAFTOSA

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- ▣ PAHO department responsible for vesicular diseases, zoonoses and food-borne illness for all of South America

# PANAFTOSA

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- Jorgen Schlundt, WHO Director of Food Safety, Zoonoses, and Foodborne Illnesses



# PANAFTOSA – FMD History

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- 30 years ago
  - 3,000 outbreaks in Brazil
  - Aluminum-adjuvanted vaccine
  
- 1986
  - Tri-valent, oil adjuvanted vaccine

# PANAFTOSA – FMD Epidemiology

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- Epidemiology of FMD dependent on:
  - Movement of animals throughout different stages of development (cow-calf to finishing)
  - Illegal movement of animals across international borders for higher market prices
  - Ecological conditions

# PANAFTOSA – FMD Epidemiology

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- ▣ Paraguay – Chaco region
  - Epicenter of sporadic FMD serotype O outbreaks over past 10 years

# PANAFTOSA

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- ▣ USDA-FSIS Import Risk Analysis Team

# Chaco



# Asuncion, Paraguay – our host family

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# Asuncion, Paraguay – our host family

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# Paraguay

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## ▣ Asuncion

- SENACSA
- Rediex
- IICA
- ARP
- EXPO

## ▣ Chaco

- Cooperativa Fernheim

# SENACSA

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## ▣ Servicio Nacional de Salud Animal



# SENACSA

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- ▣ Dr. Hugo Corrales, President
- ▣ Dr. Primo Feltes, Director of Technical Services
- ▣ Dr. Gloria Alaracon
- ▣ Dr. Victor Maldonado
- ▣ Dr. Norman Ramirez

# SENACSA

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- ▣ National Laboratory
  - FMD, Rabies, EIA, CSF, Brucellosis, TB, AI, BSE, Exotic Newcastle Disease
- ▣ BSL 3 construction to begin soon

# SENACSA

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## ▣ SIGOR II

- National database including every premise, cattle owner, FMD vaccination record, and COTA sanitary certificate

## ▣ GPS Mapping – Zona Alta Vigilancia

# SENACSA

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- ❑ SITRAP
- ❑ National traceability system
- ❑ Approved by EU
- ❑ Only 38 premises enrolled at time of visit



# SENACSA - SITRAP

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# SENACSA – Control Points

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## □ National

- 21 throughout Paraguay
- All trucks required to stop
- COLCAT security present
- Animals and documentation inspected
- Quarantine areas

# SENACSA – Control Points

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- International
  - Puerto Falcon – Argentina border
  - Private port on Paraguay River
- Meat, not animals, shipped
- Documentation, temperature inspected
- Destination – Santiago, Chile, then shipped to Russia

# SENACSA – Control Points

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# SENACSA – Packing Plant tour

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# SENACSA – Auction houses

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# SENACSA – Auction houses

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# Fiebre Aftosa - FMD

**Sigamos con un Paraguay  
libre de Fiebre Aftosa**

**CAMPAÑA DE VACUNACIÓN CONTRA LA FIEBRE AFTOSA  
SEGUNDO PERIODO 2008**  
Resolución N°: 859/08

OPTOS. DE AMAMBAY Y CANINDEYÚ DEL 1 AL 30 DE JUNIO Y SU REGISTRO  
HASTA EL 15 DE JULIO DEL 2008.  
PARA LOS DEMÁS DEPARTAMENTOS DEL PAÍS, DEL 15 DE JUNIO AL  
30 DE JULIO Y SU REGISTRO HASTA EL 14 DE AGOSTO DEL 2008.



**Señor Ganadero:**  
Vacunando la totalidad de su hacienda,  
Usted protege el Status Sanitario del País.

**SENACSA**  
Servicio Nacional de Sanidad y Control de Alimentos

Obtenga información en las Unidades Zonales del SENACSA  
o en Ruta Mcal. Estigarribia Km 10 1/2 - San Lorenzo - Paraguay  
Teléfonos: (021) 505 727 - 501 374 - Fax: (021) 507 863  
web: [www.senacsa.gov.py](http://www.senacsa.gov.py) - e-mail: [info@senacsa.gov.py](mailto:info@senacsa.gov.py)



# SENACSA – FMD Vaccination Protocol

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- Every 6 months
- SENACSA officials (fiscalizadores) must be present
- Zona Alta Vigilancia – different schedule

# SENACSA - Fiscalizadors

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- All cattle vaccinated
- Cold chain for vaccine is preserved
- All documentation is correct



# FMD Vaccination–Ceremonial Opening

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# SENACSA – Zona Alta Vigilancia

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- ❑ Location of last FMD outbreak
- ❑ Brazil border
- ❑ 15 km either side of the border
- ❑ SENACSA works in cooperation with Brazilian officials





# SENACSA – Zona Alta Vigilancia

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- ❑ FMD Vaccination begins earlier
- ❑ All animals receive eartag at time of vaccination
  - Red – Paraguay
  - Green and yellow - Brazil

# SENACSA – Zona Alta Vigilancia

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# SENACSA – Zona Alta Vigilancia

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# ARP – Association Rural Paraguay

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- ❑ National organization for agriculture
- ❑ Marcos Medina – Technical Advisor to President of ARP
- ❑ Powerful within Paraguay and Mercosul
  - Only agricultural association in Paraguay
  - Monetary support

# EXPO

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- ❑ National “fair” held annually
- ❑ Several smaller expos and rodeos held by state associations
- ❑ Cattle judging one of the main attractions
- ❑ Carnival environment

# EXPO

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# EXPO

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# EXPO

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# IICA

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- ❑ Inter-American Institute for Cooperation on Agriculture
- ❑ Provides technical support and expertise to both public and private sectors toward agricultural development

# Rediex

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- ❑ Facilitates trade (mainly exports) with other countries
- ❑ Brings together all players in one industry to discuss export goals and how to achieve them



# Western Paraguay - Chaco

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- ❑ Chaco environment
- ❑ Rainy season November – February
- ❑ “Green Hell”
  - Very thick brush and trees full of thorns
  - Poisonous snakes, jaguars, pumas and others

# Chaco – “Green Hell”

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# Chaco – “Green Hell”

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# Chaco – “Green Hell”

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# Chaco - Mennonites

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- ❑ Settled area in late 1920's, early 1930's
- ❑ Some from Canada, some from Russia
- ❑ Formed cooperatives immediately
- ❑ Productive area
  - Dairy, beef, peanuts, cotton, milo, etc.

# Cooperativa Fernheim

- Filadelfia, Paraguay
- Largest of Mennonite colonies



# ATF

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- ▣ Assistance Technica Fernheim
- ▣ Provides services to cooperative members
  - Veterinary care
  - Forestry
  - Soil consulting
  - Land surveying and mapping



# ATF

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# ATF – Veterinary services

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- ❑ 6 veterinarians on staff
- ❑ Some horses and small animals
- ❑ Mostly beef and dairy cattle work
  - Pregnancy palpation
  - BSE's
  - Injuries
  - "Tristeza" or tick fever

# Tristeza

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- ❑ Spanish term
- ❑ 3 tick-borne diseases
  - Anaplasmosis
  - Babesiosis
  - Piroplasmosis
- ❑ Disease of growing concern in Chaco

# Anaplasma marginale survey

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- ❑ Sponsored by Cooperativa Fernheim and ATF
- ❑ Cross-sectional survey
- ❑ 13 herds, 500 animals sampled
- ❑ Both beef and dairy cattle
- ❑ c-ELISA test used to determine animals with carrier status

# Anaplasma marginale survey

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# Anaplasma marginale survey

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# Anaplasma marginale survey

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## □ Results

- 6 of 13 herds 100% positive for antibodies
- All herds at least 70% positive

## □ Recommendations

- Vaccination not necessary
- Naïve animals should be exposed either naturally or by vaccine to disease
- Current treatment protocol should be continued for clinically ill animals (tetracycline antibiotics and NSAID therapy when deemed necessary)



# Conclusions – Paraguay & FMD

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- Advantages
  - Mennonites
  - Attitude of openness

# Conclusions – Paraguay & FMD

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- ❑ Challenges
- ❑ Chaco
  - Environment
  - Lack of infrastructure
- ❑ SENACSA – lack of support from National government

# Conclusions – Goals met

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- ❑ FMD – the disease and eradication efforts
  - SENACSA
  - PANAFTOSA
- ❑ Public Health
  - RIMSA 15
  - PANAFTOSA
- ❑ Trade Issues

# Recommendations for future students

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- ❑ Take the opportunity!!
- ❑ Learn Spanish prior to going
- ❑ Be flexible

# Thanks

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- ▣ Marcos & Delia Medina and family
- ▣ David Ashford, USDA-APHIS
- ▣ SENACSA and Hugo Corrales
- ▣ Cooperativa Fernheim and ATF
- ▣ Rudolf & Caroline Klassen and family
- ▣ Lisa Freeman & Kansas State University
- ▣ Kansas-Paraguay Partners