# Master of Public Health Public Health Field Experience

Joan Talbott, DVM
Kansas State University
Summer 2008

#### Goals

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

#### Goals

#### Public health

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

## Buenos Aires, Argentina

Weeklong Spanish language training



Plaza de Mayo

# Rio de Janiero, Brazil

- □ RIMSA 15 Conference
- PANAFTOSA



## MPH Supervisor

#### David Ashford, USDA-APHIS



#### RIMSA 15

- 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

- 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**

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



#### PANAFTOSA

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

#### PANAFTOSA

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



## PANAFTOSA – FMD History

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

# PANAFTOSA – FMD Epidemiology

- 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

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

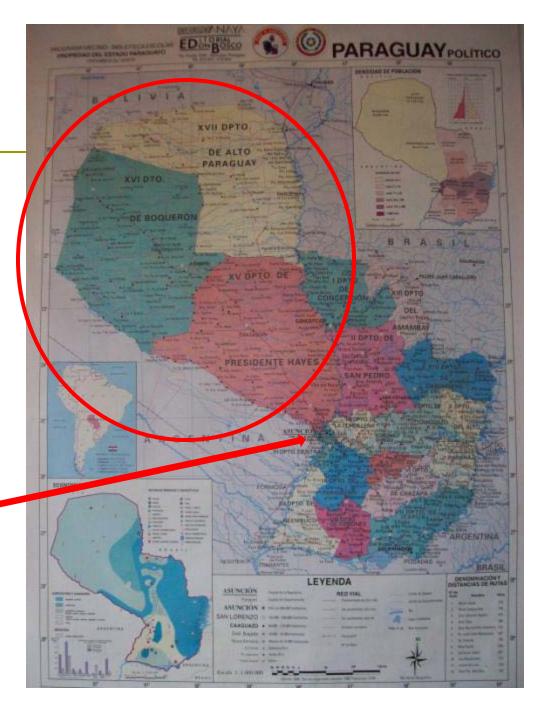
## PANAFTOSA

USDA-FSIS Import Risk Analysis Team

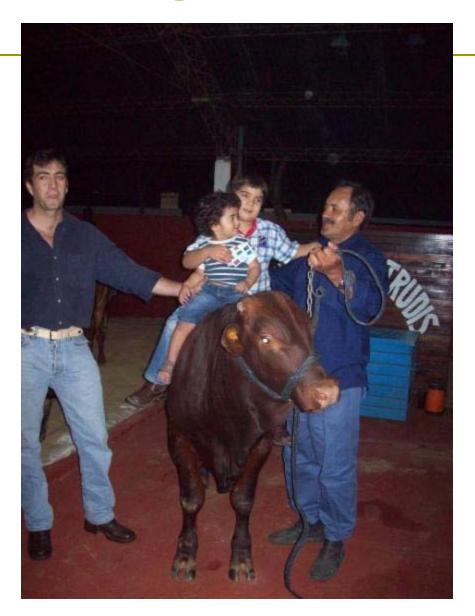
# Paraguay

Chaco

Asuncion



## Asuncion, Paraguay – our host family



# Asuncion, Paraguay – our host family



## Paraguay

- Asuncion
  - SENACSA
  - Rediex
  - IICA
  - ARP
  - EXPO
- Chaco
  - Cooperativa Fernheim

Servicio Nacional de Salud Animal



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

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

- SIGOR II
  - National database including every premise, cattle owner, FMD vaccination record, and COTA sanitary certificate
- GPS Mapping Zona Alta Vigilancia

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

## SENACSA - SITRAP





#### SENACSA – Control Points

#### National

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

#### SENACSA – Control Points

- 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



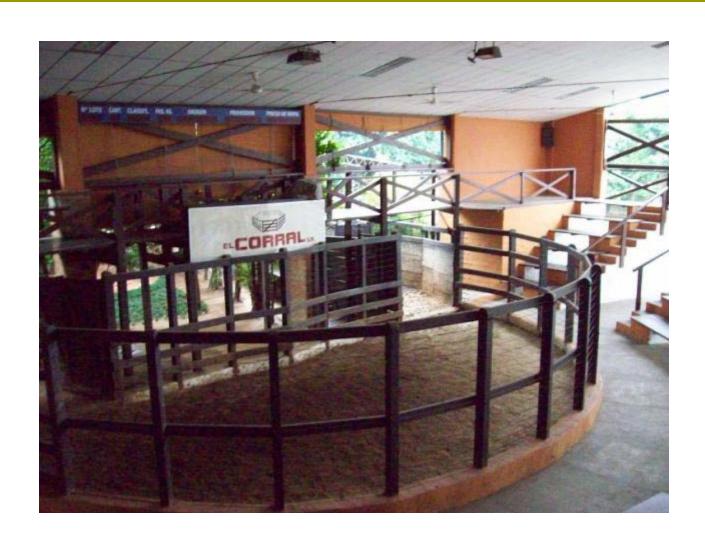
# SENACSA – Packing Plant tour



## SENACSA – Auction houses



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## Fiebre Aftosa - FMD



## SENACSA – FMD Vaccination Protocol

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

## SENACSA - Fiscalizadors

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



# FMD Vaccination-Ceremonial Opening



## SENACSA – Zona Alta Vigilancia

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

## Zona Alta Vigilacia



# SENACSA – Zona Alta Vigilancia

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

# SENACSA – Zona Alta Vigilancia



# SENACSA – Zona Alta Vigilancia



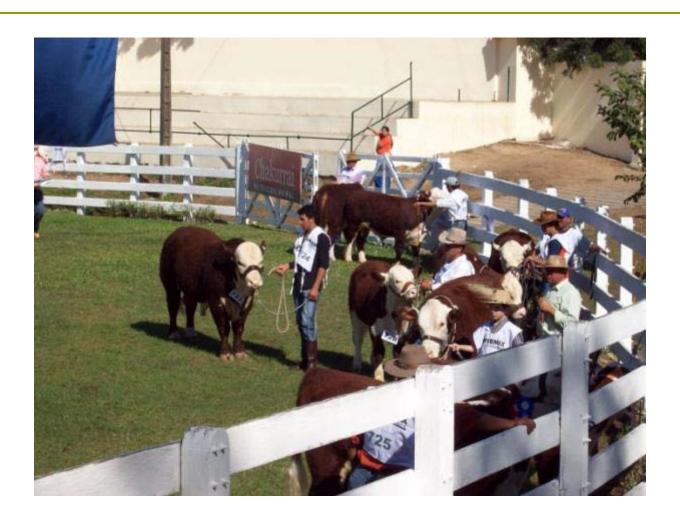
# ARP – Association Rural Paraguay

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

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







## IICA

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

## Rediex

- 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

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

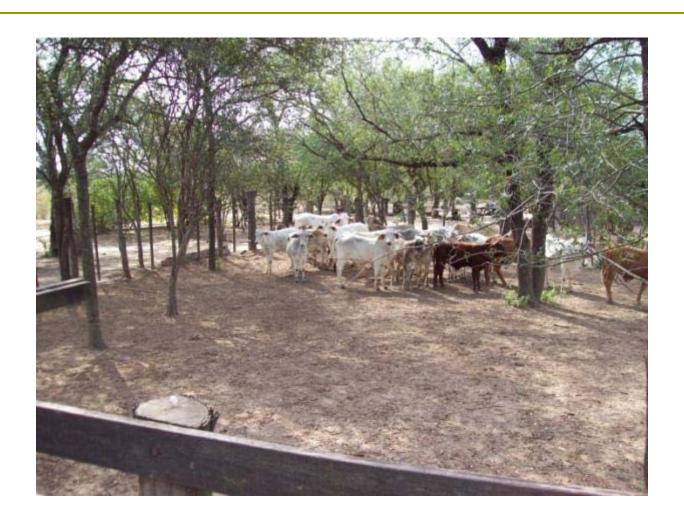
# Chaco – "Green Hell"



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## Chaco - Mennonites

- 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

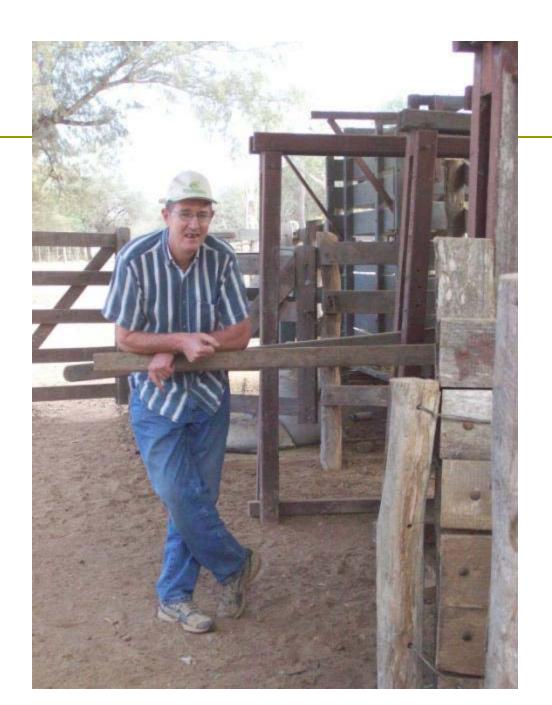
- □ Filadelfia, Paraguay
- Largest of Mennonite colonies



## ATF

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

## ATF



## ATF – Veterinary services

- 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

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

- 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





#### 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

- Advantages
  - Mennonites
  - Attitude of openness

# Conclusions – Paraguay & FMD

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

## Conclusions – Goals met

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

#### Recommendations for future students

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

## Thanks

- 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