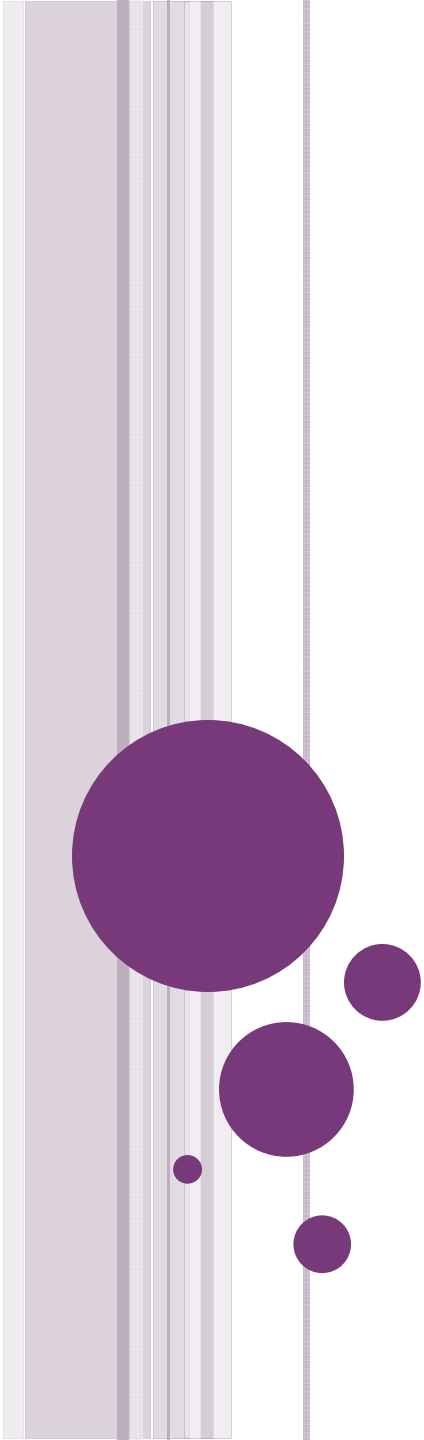


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HEALTH AND MARKETS, UNIVERSAL BEEF ISSUES

Sara McReynolds, DVM

September 18, 2008

MPH Field Experience

GOALS

- Increase awareness of the specific differences and challenges of eradication versus control programs in developing countries
- Understand the design and implementation of intensive national health programs, and the details of Foot and Mouth disease and epidemiology



GOALS

- Study the role of relevant governmental and non-governmental organizations in animal and human health
- To gain knowledge of the job responsibilities and career pathways for veterinarians in public service and public health



RIMSA CONFERENCE

- 15th Inter-American Meeting, at Ministerial Level, on Health and Agriculture
- Agriculture and Health: Alliance for Equity and Rural Development in the Americas



RIMSA CONFERENCE

○ Discussion Topics

- **Facing new challenges: Climate Change, Food Security, and Economic Growth**
- **Nutrition, Food Safety and Health**
- **Rural Development and Health**



RIMSA CONFERENCE CONCLUSIONS

- Neglected diseases and zoonoses are a great burden on rural populations. Urgent measures for strengthening prevention, surveillance and control should be carried out especially in rural communities, giving priority to indigenous people and other vulnerable groups.



RIMSA CONFERENCE CONCLUSIONS

- The need for a rapid collective multi-agency response, especially in view of possible pandemic and epidemic outbreaks, is a major challenge that requires coordination between continents, countries, and agencies to protect the entire global population.



GIEFA

- Inter-American Group for Eradication of Foot and Mouth Disease
- Formed in 2004 because of concerns of the resurgence of the virus
- Working group of private and public center representatives



GIEFA

- Responsible for the preparation, the supervision, and the implementation of a regional project for the final phase of eradication of FMD
- Mr. Philip Bradshaw
 - President of GIEFA



PANAFTOSA

- PANAFTOSA is the PAHO center in South America that is in charge of food safety, zoonoses as well as vesicular diseases including foot and mouth disease



PANAFTOSA

- Dr. Jurgen Scjhludt the director of the department of Food Safety and Zoonoses at WHO, Geneva
- USDA Import Risk Analysts - Dr. Alan Terell and Dr. Stephanie Kordick



FMD ERADICATION CHALLENGES

- Past 10 years outbreaks have been in a radius of 500 km centered over Paraguay
 - 5 different countries and 30 million head
- Must understand:
 - Movement of Animals
 - Ecological Conditions



PARAGUAY

- 6.5 Million People
- 10 Million Cattle
- FMD – free with vaccination since 2005



SENACSA

- National Service of Quality Animal Health
- 5 Departments
 - Animal Health
 - Animal Products
 - Diagnostic Laboratory
 - Technical Services
 - Administration and Finances
- 80% of funding comes from The Rural Association



SENACSA

- 7 Health Sanitary Regions
 - Each region has multiple zones
 - Each zone has a SENACSA control office
- Inspection Control Points
 - Over 70 throughout Paraguay



SENACSA REGIONAL OFFICE



SENACSA ZONE OFFICE



MONITOR OF MOVEMENT

- Computer Program SIGOR
 - Premises, Cattle Owners, and Movement Certificates
- Register Animal Movement at SENACSA Control Points
- Travel with Documents



FMD VACCINATION CAMPAIGN

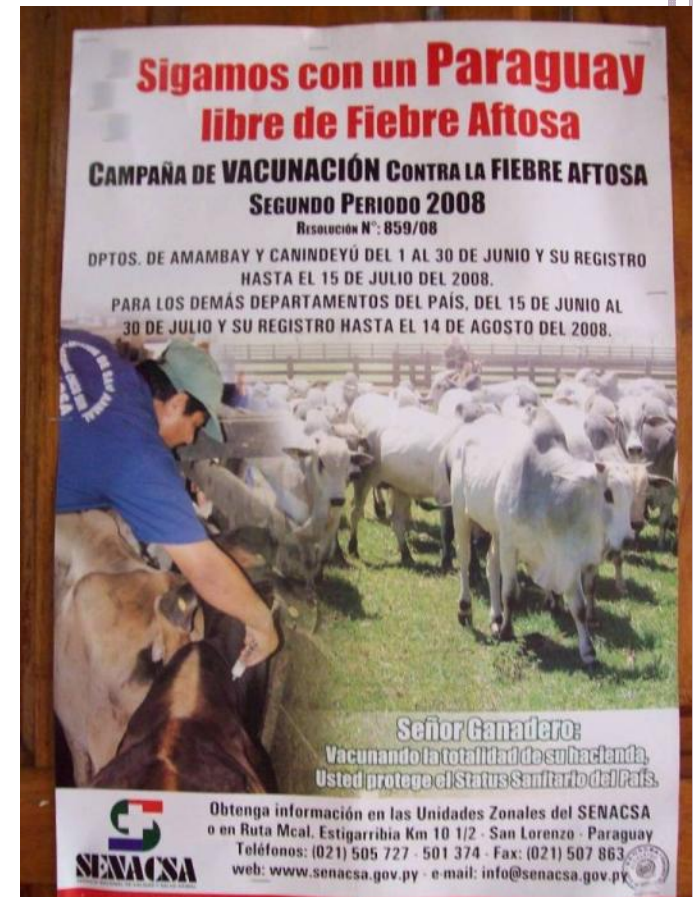
- The SIGOR system is used to monitor FMD vaccination
 - Register how many doses of vaccine are purchased
 - Register how many cattle are vaccinated
- Each Zone Office has a facilitator who goes to the ranch
 - Counts cattle vaccinated
 - Proper vaccination technique
 - Proper vaccine handling





SENACSA

- FMD Vaccination Program – 2 times a year
 - Herd less than 100 – given the vaccine
 - Herd greater than 100 – purchase vaccine
- Official Start of the Vaccination Campaign of the Season
 - June 20th



SENACSA





HIGH VIGILANCE AREA

- 15 km from the border
- No physical border
- In the zone on the Paraguay side there are 547 ranches and 147,387 cattle



Región Directamente involucrada en las acciones conjuntas del area de Frontera

Representacion Esquematica de la Zona



HIGH VIGILANCE AREA



Paraguay tags for High
Vigilance Area





The Americana Ranch



CHALLENGES

- Very poor infrastructure
- Shortage of veterinarian services
- Difficulty in employing reliable and educated facilitators
- A weak public sector



PARAGUAY AND FMD

○ Brazil/Paraguay Border

- Main economic activity
 - 6 million bovines
- No official control of animal movement
- Poor vaccination coverage



PARAGUAY AND FMD

- Chaco Region

- Argentina/Paraguay/Bolivia
- 2003 Outbreak
- 750,000 bovines
- Persistence?
 - Geography
 - Difficult access
 - Dispersal of herds
 - Low commitment of cattle sector



INTERNATIONAL MARKETS

- European Union – Trade Opens
 - Grass-Fed Hormone Free Beef



INTERNATIONAL TRADE

○ Animal Identification

- SITRAP - voluntary program
 - Part of the SIGOR computer program
 - Register premise
 - Registry book is kept on the premise
 - Monthly submission form



SITRAP

- White Tag – existing cattle
- Yellow Button – weaned calves
- Yellow Tag – moved cattle



- North of the Paraguay River

- [illegible]

COOPERATIVE FERNHEIM

- Filadelfia, Paraguay
- 470 kms north of Asuncion
- 4,000 people
- German Mennonite Community



COOPERATIVE FERNHEIM

- The cooperative has two supermarkets, a restaurant, hotel, book stores, furniture stores, pharmacy, hospital, nursing home, agricultural extension service, veterinarian clinic, packing house, peanut factory, milk factory, mechanic shop, gas stations, radio station, schools, colleges, and a bank.
- The income from all the businesses are shared and managed by the Coop.





COOPERATIVE FERNHEIM

- We worked with the Technical Assistance Office which includes the agriculture extension service and veterinarians.
- The office receives 0.75% of the sale price on all meat, milk, and crops.
- Meat production is 75% of the agriculture production in the colonies.
 - They ship 2,000 kg every week to Dubai. They also export meat to Chile, Russia, Brazil, Peru, and Israel.
- They started dairy production in the 1950s with the help of Robert Unruh of Kansas State University.



TECHNICAL ASSISTANCE OFFICE

○ Veterinary Work

- Pregnancy palpation, bull soundness exams, lameness exams, rectal prolapse, mastitis, milk fever, tick fever, and tuberculosis testing







ANAPLASMA MARGINALE STUDY

- The objective of this study was to determine the prevalence of positive antibodies to *Anaplasma marginale* among young cattle in several different herds, both beef and dairy, associated with Cooperativa Fernheim.
- Inttas from Argentina recommended vaccination of the replacement heifers after calving





MATERIALS AND METHODS

- Blood samples were drawn from the caudal tail vein.
- The blood was spun down, chilled, and the serum was sent to Prof. Dr. Antonio Rodriguez Sanchez at Centro de Diagnostico Veterinario for testing using the c-ELISA method.



MATERIAL METHODS



- Collected 356 samples from Brahman and Santa Gertrudis calves
- Collected 46 samples from dairy calves



MATERIALS AND METHODS

<u>Name</u>	<u>Owner</u>	<u>Age</u>	<u>Total Calves</u>	<u>Total Samples</u>	<u>Date Sampled</u>	<u>Sampling Interval</u>	<u>Starting Calf</u>	<u>Type</u>	<u>Sample Numbers</u>
Est Aguila	Coop Fernheim	8 months	300	45	5-Aug	7	5	Beef	1-52
Chacra Experimental	Coop Fernheim	8 months	120	33	5-Aug	5	1	Beef	53-87, 89
Dos Banderas	Felipe Schmidt	8 months	150	38	6-Aug	3	2	Beef	88, 90-132
Corrales	Theo Durksen	8 months	130	31	6-Aug	3	1	Beef	133-167
Laguna Pora 1	Helmut Stahl	1-2 years	300	45	7-Aug	6	2	Beef	180-230
Laguna Pora	Heinz Lowen	1 year	50	28	7-Aug	1	3	Beef	231-260
Laguna Pora 2	Coop Fernheim	8 months	500	54	7-Aug	7	7	Beef	261-320
Laguna Pora 3	Coop Fernheim	1 year	280	43	7-Aug	6	4	Beef	321-365
Laguna Pora 4	Coop Fernheim	> 2 years	165	35	7-Aug	3	1	Beef	366-403
Campoi Sitrap	Coop Fernheim	8 months	400	52	8-Aug	7	2	Beef	440-491
Lichtfelde	Ronald Ens	6-12 months	24	12	6-Aug	1	1	Dairy	168-179
Valencia	Erwin Wiens	6-20 months	43	25	8-Aug	1	2	Dairy	404-429
Valencia	Konrad Regier	8-12 months	9	9	8-Aug	1	1	Dairy	430-439

COLLECTING SAMPLES



OVER WORKED?



OVER WORKED?



RESULTS

Location	Number of Samples	Number Positive	Percent Positive
Estancia Aguila	45	45	100.00%
Chacra Experimental	33	33	100.00%
Dos Banderas	38	38	100.00%
Corrales	31	29	93.55%
Litchfelde	12	12	100.00%
LP 1 - Stahl	43	42	97.67%
LP - Lowen	28	20	71.43%
LP 2 - COOP	54	44	81.48%
LP 3 - COOP	43	41	95.35%
LP 4 - COOP	35	34	97.14%
Erwin Weins	26	26	100.00%
Konrad Reiger	9	9	100.00%
Campo I	50	48	96.00%

RESULTS

- Some people believe that certain animals appear to have more resistance (ex. Brahman and Brahman crosses) while others appear to be more susceptible to these disease.
- We found no evidence of Brahman cattle in the cooperative to be less likely to be infected.



DISCUSSION

- Vaccination of replacement heifers after calving is not necessary
- Naïve animals introduced into the herd should be vaccinated



CONCLUSIONS

- Paraguay has a good FMD eradication program but some changes are needed in order to be effective
- How can the changes be made?



CONCLUSIONS

- Things don't always go according to plan. You must be flexible.



CONCLUSIONS

- Cultural differences in the way they view animal and public health issues.
- Political aspects of disease control in developing countries



IN CONCLUSION



- Through this experience I have developed a finer appreciation for beef both on and off the hoof.



Any Questions?

