



28 de enero de 2003

Vaccination strategy for 2003 in Uruguay.

In 2003, all cattle population will be vaccinated with the following schedule:

CATTLE POPULATION	MONTH
ALL BOVINES	FEBRUARY
YOUNG CATTLE (Less than 2 years old)	MAY
CALVES (Born in 2003)	NOVEMBER

All vaccinations for the year 2003 will be financed by the Uruguayan government.


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REPORT ON THE FOOT AND MOUTH DISEASE SITUATION IN URUGUAY

31 December 2002

1. Background

The first report of a possible Foot and Mouth Disease (FMD) case was received on 23rd April 2001. The Veterinary Services investigated the case and clinically confirmed the disease on 24th April 2001.

The official laboratory confirmed the diagnosis serologically, identifying antibodies against virus A (VIAA and ELISA), on 25th April 2001. On 3rd May PANATOSA confirmed the presence of virus A.

The first outbreak was detected in the 6th Police District in the Department of Soriano, Paraje Palmitas (Western region of the country). On the following days, an epidemic outbreak was confirmed, involving the Departments of Soriano and Colonia.

The most probable hypothesis as to the origin of the outbreak is that the virus was mechanically introduced from active foci in Argentina, in areas along the border with Uruguay. This hypothesis is supported by the fact that the type of virus identified is the same in both cases and no cattle or other susceptible species were introduced from Argentina to Uruguay.

The Departments of Soriano and Colonia have a mixed husbandry system, combining dairy and beef production with intensive agriculture. This system involves intense movement of trucks, machinery and people. This is an important factor contributing to virus spread (high level of contacts and high probability of massive mechanical spread). The investigation carried out suggests that the latter was a determinant factor in the spread of the disease.

This point of view is also backed by the results of the especially intense sero-epidemiological surveillance carried out in the area along the Rio Uruguay, during the weeks previous to the outbreak. These results confirmed that during March and April 2001 there was no viral activity in the police districts, where cattle were sampled before leaving the holding for a slaughter plant.

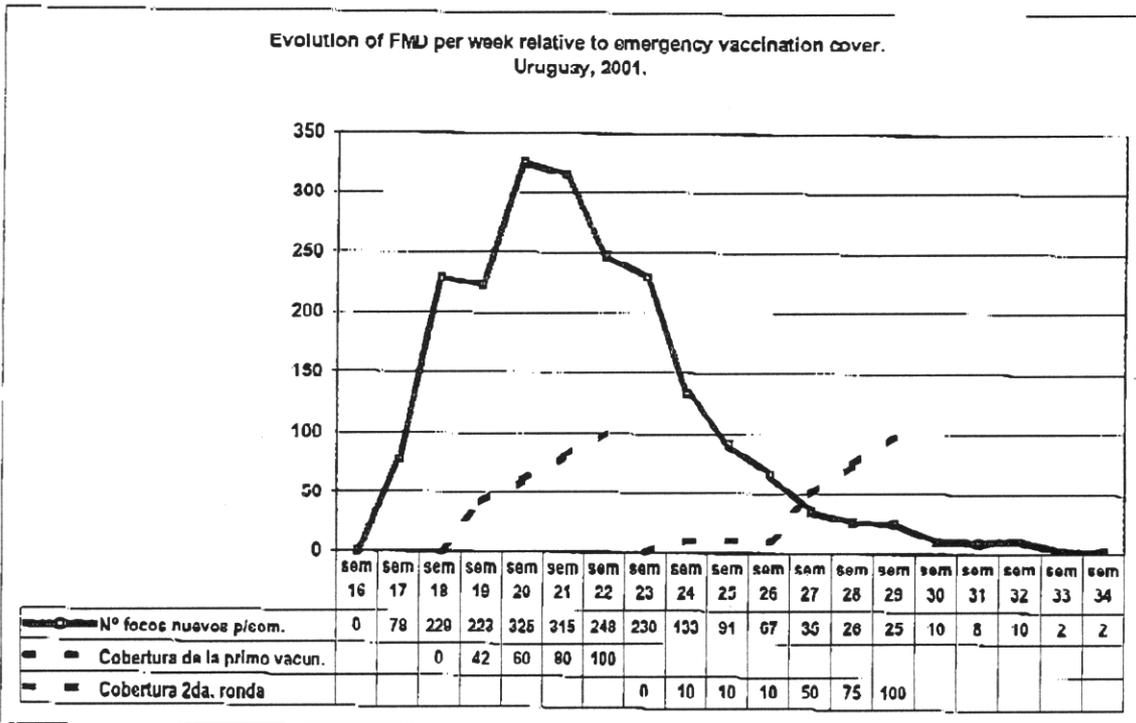
2. Actions taken

- As from 24th April 2001, immediate interdiction of the affected holding within the outbreak was decreed. Animal movement was banned and affected animals and susceptible contacts were stamped out. The Department of Soriano was closed down.

- As from 24th April 2001, export certification was immediately suspended "per se", as well as slaughter and production for exportation.
- As from 27th April 2001, the prohibition to move animals was extended to all the country, and was enforced with the help and support from the Police and the Army, according to the powers and attributions of the General Department of Livestock Services (DGSG). The response of the competent sanitary authority was supported by the National Sanitary Emergency System (SINAESA), declared through resolutions from the DGSG and within the regulatory framework provided for by the Animal Police Health Act (N° 3.606, dated 13 April 1910) and the Act for the Control and Eradication of FMD (N° 16.082, dated 4 October 1989).
- As from 27th April 2001, the epidemics extended to other areas. The sanitary authorities decided to enforce the National Contingency Plan's alternative 2: stamping out of affected animals and susceptible contacts within the outbreak, ring vaccination around the outbreak and anticipated slaughter of vaccinated animals.
- When the FMD epidemics extended throughout the country, the sanitary authority changed to alternative 4 from the National Contingency Plan: discontinuation of stamping out and massive vaccination of the whole national stock.
- The first massive emergency vaccination included the cattle stock at a national level. It began on 5th May 2001, along the border with Brazil and proceeded southwards and westwards, until completion on 7th June 2001.
- On 15th June 2001, the second round of massive emergency vaccination began (re-vaccination) and was completed on 22nd July 2001. Therefore, and thanks to the booster effect, an expected effective protection of 99 to 100% was achieved, consolidating massive protection of the cattle population.
- On November 2001, all bovine animals born as from the year 2000 were vaccinated or re-vaccinated. The vaccination period was completed on 30th November 2001.
- Sheep have played only a marginal role in FMD epidemiology both in Uruguay and South America. According to field evidence and to the performance of the virus types and sub-types present, massive vaccination of this species was not justified. Serological investigation yielded 1.9% positive to VIA in sheep from holdings affected by FMD and 0.3% in animals outside the focal area, thus proving the irrelevant role played by this species in the FMD epidemics in Uruguay.
- Pigs are very well protected by oil-based vaccines, but massive vaccination of pigs was never practiced in Uruguay. Nevertheless, its strategic use in risk areas or in emergency cases is considered, if pigs were involved. Surveillance activities were carried out in risk areas.

3. Comments on the epidemic

The disease had an epidemic presentation, with a total of 2057 holdings affected. It extended in time for 18 weeks in 2001, from epidemiological weeks 17 to 34 (it involves 4 months, 120 days from confirmation of the disease to detection of the last case). The spread of the disease peaked between weeks 20 and 21, after the first week of vaccination. The reason is that vaccination procedures increase the contact rate between animals, in holdings with animals incubating the disease (without clinical signs). After the first vaccination round was completed, the number of new cases descended very clearly. The last case of the disease was reported on 21st August 2001. The second and following vaccination rounds assured an optimum immunisation level in cattle, and minimised the probability of occurrence of other sources of infection (carriers). They also secured absence of viral activity, a fact confirmed by the sero-epidemiological samplings carried out during 2001 and 2002.



4. Present situation

The outbreak was controlled by means of the abovementioned actions. The strategy applied has been successful, the vaccines used were appropriate and the emergency actions had positive results. No new outbreaks have been reported in the last 14 months.

To assure sanitary conditions, a vaccination strategy has been implemented, epidemiological surveillance mechanisms have been strengthened, as well as response to suspicious cases, cooperation with neighbouring countries for the development of a regional fight against the disease has been intensified and additional measures have been taken in order to assure maximum guarantees to foreign markets.

4.1. Vaccination strategy for 2002

As in previous vaccination periods, the vaccines were imported and controlled at the countries of origin. The government covered the cost of the vaccine and the farmers were in charge of its application. Routes for vaccination control were established, each farmer was assigned a date for the application of the vaccine and adequate measures were adopted to assure the chain of refrigeration.

The **first massive vaccination** of the country's cattle stock was completed between 1st and 28th February 2002, achieving a **vaccination cover of 100%**.

The **percentage of holdings with direct vaccination control** during the February 2002 period reached **38%** (16.909 holdings controlled, out of a total of 48.518).

The **percentage of inspected animals** was **44.9%** (4.767.138 heads controlled out of a total stock according to DICOSE's figures for 2001 – of 10.598.043 heads of cattle).

The **second massive vaccination** was carried out in May 2002, involving all the national cattle stock, and achieving a **vaccination cover of 100%**.

The **percentage of holdings under direct vaccination control** during that period amounted to **25,8%** (farms controlled by the official services or by registered private veterinarians), i.e., 12.542 out of 48.518 for the whole country, according to DICOSE's figures for 2001.

The **percentage of animals inspected** was **35,5%** (3.764.784 heads of cattle controlled out of a total population of 10.598.043).

The **third vaccination** in the year 2002 was applied at November to all the calves born during this year. The veterinary service direct controlled the vaccine application in 17% of the country farms.

4.2. Vaccination strategy for 2003.

In 2003, all cattle population will be vaccinated with the following schedule:

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4.3. Epidemiological surveillance

The surveillance activities will include control and inspection of animals at:

- a. market places,
- b. livestock's shows,
- c. routes (official places for control on the ways),
- d. farms (animal movements and dairy habilitation)
- e. seroepidemiological surveys.

4.3.1. Seroepidemiological sampling in cattle. To this date, two seroepidemiological samplings in bovine have been carried out. The method used for the detection of antibodies to FMD virus non-structural proteins in cattle was ELISA 3 ABC (UBI).

A) The **first sampling** was carried out in September 2001, and its objective was to determine the degree of participation of the bovine species in the FMD epidemics and to establish the geographical spread of the disease.

To establish sample size, a random, stratified, two stage sampling was carried out:

1. In a first stage, 210 holdings were selected, based on the hypothesis that about 6% of the holdings were affected, with a confidence level of 95%.

On the assumption that the probability of finding positive animals would be a function of the distance between susceptible animals and the clinical outbreak, three geographical strata were established:

Stratum I: made up by areas within the holdings with clinical cases and a zone of 5 km from the centre of the focal farm.

Stratum II: made by a geographical area between 5 and 10 km from the focus.

Stratum III: made by the geographical area outside the 10 km limit from the clinical focus.

2. In a second stage, the animals were selected. The assumptions made with regard to minimum prevalence for FMD infection in positive holdings were the following with a confidence level of 95%:

Stratum	Minimum prevalence	Bovine per holding
I	20%	15
II	10%	30
III	5%	60

B) The **second sampling** was carried out in February 2002, with the objective of establishing the seroepidemiological situation for the cattle population and of studying the prevalence of sero-positive animals with regard to the study carried out in September 2001.

The study was designed so its results could be compared with those obtained in September 2001. Therefore, the same strategy was used, with the following adjustments:

a. Sub-stratification according to the activity of the farm, i.e., beef or dairy cattle. For dairy farms, 20 farms per geographical stratum were selected in the first stage. This modification was proposed due to the fact a number too small to support any conclusion for this sector.

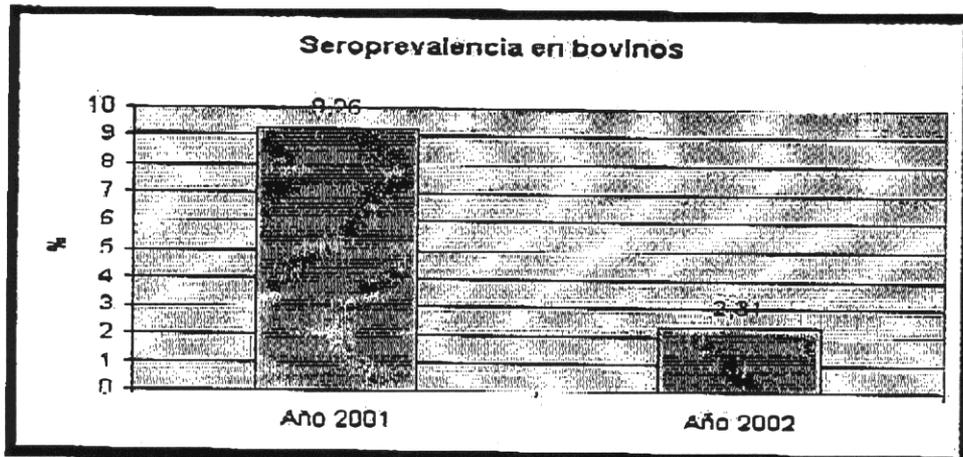
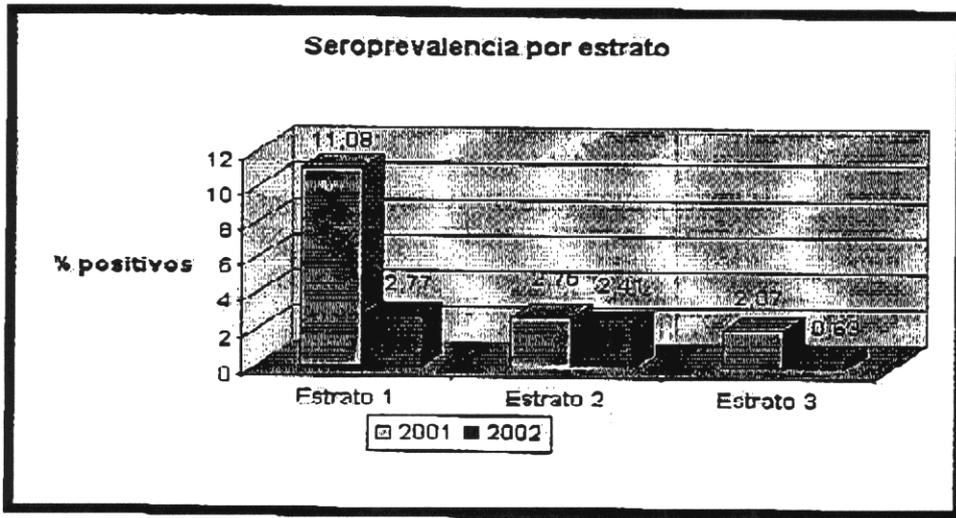
b. To increase the size of the sample for stratum III, from 70 to 90 holdings, to correct distortions detected in the previous sampling and to keep the power to make comparisons.

The samples were randomly selected using the Intercooled SIATA Programme (version 7.0) within each type of production system and geographical stratum.

Final results

<u>MONTH / YEAR</u>	<u>HOLDINGS</u>	<u>SAMPLES ANALYSED</u>	<u>PREVALENCE ESTIMATED</u>	<u>STRATUM</u>	
SEPTEMBER 2001	203	6.859	9,26% ± 2,28%	I	11,08% ± 2,89
				II	2,75% ± 0,84
				III	2,07% ± 0,93
FEBRUARY 2002	199	6.763	2,31 ± 0,79 %	I	2,77 ± 0,79%
				II	2,41 ± 0,90
				III	0,63 ± 0,33

Comparison between 1st and 2nd samplings in cattle population (2001– 2002)



D) Conclusions

The results from the seroepidemiological samplings show a fall in the level of non-structural antibodies against FMD virus. This result was expected, since at the time of sampling, six months had elapsed since the last FMD clinical case in Uruguay.

These results would prove that the antibodies are residual and that, at the time of the study, there is no viral activity.

4.3.2. Investigation of reports of FMD suspicious cases

During 2002, to this date, 27 suspicious cases have been investigated. All the cases were studied with a maxim reaction time of 4 hours and were discarded both from the clinical and epidemiological or laboratory points of view.

NUMERO	FECHA	DEPTO.	PARAJE	ENF.	DIAGNÓSTICO
1	03-01-02	Montevideo	La Colorada - 23 a	1 bov.	Calarrhial Fever
2	26-01-02	Montevideo	Melilla 27a	1 bov.	Actinobacillosis
3	06-02-02	Río Negro	Localidad Grecco	1 bov.	Actinobacillosis
4	12-02-02	Colonia	San Luis		Pododermatitis
5	15-02-02	Paysandú	Rabón	12 bov.	Anafilaxis caused by the vaccine
6	19-02-02	Colonia	Pichinango	1 bov	Actinobacillosis
7	26-02-02	Rocha	Rocha - 11a. SP	1 bov	Actinobacillosis
8	04-03-02	San José	Chamizo	1 bov.	Viral diarrea
9	04-03-02	Tacuarembó	Zapará	1 bov.	Traumatic Pododermatitis
10	02-04-02	San José	Chamizo	2 bov.	Photosensibility
11	04-04-02	Rivera		3 bov.	BOCOPA. (prairy mushroom)
12	13-04-02	Durazno	Los Tapes	1 bov	Neumonía.
13	24-04-02	Cerro Largo	Rincón del Rey	2 bov.	Viral Diarrea
14	18-04-02	Colonia	La Laguna	3 bov.	Neumoenteritis.
15	09-05-02	Soriano	Juncal	10 bov.	Actinobacillosis
16	27-05-02	Colonia	Viboras	4bov.	Actinobacillosis
17	08-06-02	T. y Tres	Yerbarito	1 bov.	Traumatic
18	14-06-02	San José	Puntas de Valdez	5 bov.	Fotosensibility.
19	08-08-02	Paysandú	Colonia La paz	1 bov	Viral Diarrea (BVD)
20	03-09-02	Soriano	Asencio	1 bov.	Neumonía
21	23-09-02	Paysandú	Col.19 de abril	15 bov. Enf. & 3 muertos	Saguaypé
22	14-10-02	Río Negro	Sdi de Navarro	2 bov.sobreaños,1 murió	Fotosensibility.
23	23-10-02	San José	San José	1 bov	Traumatic
24	20-10-02	Soriano	Ejido Mercedes 3era	1 bov	Actinomicosis
25	14-10-02	Artigas	Cuaró	1 bov	Traumatic
26	18-12-02	Paysandú	Corrales	8 bov	Dermatitis
27	17-12-02	Salto	Matajojo Chico	2bov 1 a 2 años	Viral Diarrea

4.4. Regional cooperation in the fight against the disease

Meetings with official veterinaries from the neighbouring countries and adjacent areas have been carried out, in order to establish common actions and to exchange direct information between the official and private sectors involved, in order to eradicate the disease in the sub-region of the Basin of the River Plate.

4.5. Additional measures

In order to provide guarantees for the importing markets, the General Department of Livestock Services has enforced additional measures, taking into account the country's new sanitary situation, i.e.:

- Inspection of the animals, verification of the owner's firebrand and individual identification.
- Appropriate chain of certifications, from the holding to the slaughter plant, guaranteeing the safe origin of the animals.
- Adequate treatment of animal products, in order to inactivate the FMD virus (maturation, deboning, heat treatment, etc.)

5. Market situation

On 9th October 2001, the Veterinary Committee of the European Union proposed to the Commission to grant authorisation to Uruguay to resume meat production (cattle, sheep and goats) for the European Union. The Commission issued Decision 2001/767/CE, dated 31 October 2001, authorising to resume production as from 1st November 2001.

Other markets have also lifted their restrictions and resumed importation of meat and meat products from Uruguay, e.g., Egypt, Poland, Hungary, Chile, Algeria, Russia, MERCOSUR countries, other Latin-American countries, and, of course, all European Community member countries.

After a foot-and-mouth disease (FMD) Risk Analysis made by Agriculture Department, the Canadian Meat Market is opening to Uruguayan deboned fresh meat from October 2002

