

COMMISSION  
OF THE  
EUROPEAN COMMUNITIES

SANCO/10224/2004

---

Directorate General for  
Health and Consumer Protection

---

SANCO/E.2

REPORT ON THE  
  
**TASK FORCE MEETING  
OF THE  
SHEEP & GOATS  
BRUCELLOSIS SUB-GROUP**

**Ciudad Real, Spain, 21-22 October 2003**

## **REPORT OF THE**

### **SHEEP & GOAT BRUCELLOSIS SUBGROUP OF THE TASK FORCE MEETING HELD IN CIUDAD REAL, SPAIN, ON 21-22 OCTOBER, 2003**

**Agenda:** The meeting was held on 2 days (see Annex 1).

**Participants:** see Annex 2.

#### **DAY 1**

##### **1. Introduction – J.A. Barahona and J.L. Paramio (Dirección General de Ganadería)**

The main characteristics of the sheep and goat husbandry in Spain were presented.

In Spain, there are 24 millions sheep and 3 millions goats. The number of animals is rather stable for the last 10 years but the number of flocks is decreasing. 20 % of flocks and animals are dedicated to milk production and 80 % to meat production. Most sheep are held in flocks of more than 200 heads and goats in flocks of more than 100 heads.

The results of the Spanish eradication programme of sheep and goats brucellosis for 2002 were presented:

- 138 104 flocks were serologically tested, 92,35 % of them with negative results (versus 88,85 % in 2001 and 75,83 % in 1995).

- 19616 729 animals were tested, 0,92 % of them with positive results (versus 1,17 % in 2001 and 2,84 % in 1995).

So, figures show a real improvement of the epidemiological situation.

At 31 December 2002, nearly 80 % of the flocks are qualified regarding brucellosis, 46 % with the officially free status and 33 % with the free status.

During 2002, vaccination was implemented in 41 084 flocks and concerned 1273 018 young animals.

However, maps show different situations between Autonomous Communities. In Balearic and Canary Islands, 100 % of flocks are free and the prevalence rates range between 99 % and 100 % in Galicia, Asturias and Basque country. On the opposite, the percentage of free flocks remains lower than 90 % in the Autonomous Communities of Catalonia, Aragon, Valencia and Andalusia.

As explained, the main problems for the implementation of the programme were due to the important transhumance movements, lack of vaccination coverage of young animals and problems linked to serological diagnostic tools.

The evolution of the rules was described: since a law of 2003 came into force, only free flocks are allowed to move for transhumance; furthermore, qualification of common pastures will be set up.

For the future, the competent authorities wish to reinforce their actions for a better implementation of vaccination in high prevalence areas, further bacteriological and serological investigations of outbreaks, investigation of single reactors, which represent 40 % of positive

flocks in some regions, a more frequent use of total depopulation when brucellosis is proven and adequate use of the “suspended status”.

## **2. Autonomous Community of Castilla-La Mancha. JM. Suárez**

### *Introduction*

An overview of the livestock production was presented as well as the main features of the sheep and goat sector in the Autonomous Community. There are 2 529 104 small ruminants present in the AC.

- 40% are mixed sheep and goat flocks.
- 40% are flocks of small size (20-300 females); 50% are big size flocks (500-600 females) extra-big flocks (> 1000 females) are mainly located in Ciudad Real.
- There is almost no transhumance.

The legal base and the competent authority responsibilities have been highlighted, too: there is 1) a national legislation (that is a transcription of EU regulations) aimed to coordinate the national program and 2) the Autonomous Communities decrees that are aimed for the implementation of the program at the Autonomous Community level.

There are 158 “official veterinarians and 240 ADS (Agrupacion de Defensa Sanitaria, Aggregations of Farmers for Sanitary Defence) authorized veterinarians. Although 10% of the ADS veterinarians are audited every year, it is not clear how the official vets and ADS vets are functionally operating, particularly in infected farms.

The general organization is as follows:

- The Autonomous Community DGPA (Directorate) is responsible for the general approval and supervision of the program.
- The provincial offices (Delegation) organize the campaign at the province level (material supply, agenda for the blood sampling, official communication with the farmers)
- The district office (OCA – Comarca) carries out mainly administrative tasks at the local level + controls of animal movements and control of the ADS vets.
- The ADS vets actually carry out the sanitary actions (blood sampling, vaccination, ID of infected animals).

In order to avoid that positive animals could be traded by dealers, that was reported as a critical pointing this AC, an “on-the-spot” slaughtering of animals has been implemented.

### *Epidemiological indicators*

-A mass vaccination program started in 1985. As a result there was a dramatic decline in the number of reported human cases from 1985 (50 cases per 100 000 habitants in the AC) to 2002 (4/100.000). A full sampling coverage occurred for the first time in 1992 with 32.9% of the flocks classified positive and 2.99% of the individual animals classified positive. There has been a slow but constant decline (except in 1999, related to the fact the Classical Swine Fever present at that time had required almost all the available manpower) and in 2003, the seroprevalence were 6.8% and 0.84% respectively at the flock and animal level. In 2002, 89.02% of the flocks were free. The breakdown is has follows:

- M1: 0%
- M2+: 8%

- M2-: 3%
- M3: 40%
- M4: 49%

In 2002 (full year), vaccination was performed in 29.06% of the flocks and 7.47 % animals were vaccinated representing 25% of the total replacement population. The number of samples submitted for bacteriology in 2002 was 118, which resulted in 14 isolations of *Brucella* spp. but no information about the origin of the samples was provided. In 2002, special measures were introduced and extended epidemiological inquiries were implemented. Some corrective actions were proposed like: better vaccination coverage and better movement control.

### **3. Autonomous Community AC of Andalucía. M.A. García**

*Structure of ovine and caprine livestock. Structure and organization of Veterinary Services. Organization and implementation of the campaign.*

Andalusia Autonomous Community is located in the south of the Iberian Peninsula, and has an extension of 87.000 Km<sup>2</sup>. The overall ovine and caprine population is about 3,4 millions of head, fairly uniformly distributed through the territory. From the topographical point of view, the region comprises a central valley surrounded by mountains; goats are more concentrated in the southern and in the coastal areas, while sheep are more concentrated in northern areas.

There are 128 ADS, that cover about 94% of the sheep and goats populations. As a result of the reorganization of the sheep and goats production sector, during the 1998 – 2003 period, the number of flocks has decreased and the flock average size has doubled, reaching about 220 animals per flock. Sheep and goat farming represents overall 2,23% of the total productions in the agricultural sector of this region, while sheep farming alone reaches 1,77%. The problems affecting this sector are related 1) to the marginal economic weight of the ovine and caprine farming production in the region; 2) to the low social and cultural level of farmers; 3) to the prevalence of an extensive system of management of flocks and 4) to the operating in non-productive and mountainous areas.

The planning of brucellosis prophylaxis activities recognizes a central level as well as regional, provincial and district (comarca) levels. The organization of veterinary services comprises a total amount of 221 veterinarians dedicated to brucellosis and distributed at regional, provincial (8 departments of animal health) and comarca (59 comarca offices) levels. Each province has at least 1 laboratory devoted to animal health.

Incidence of human brucellosis in the region has decreased from more than 15 cases/100 000 inhabitants in 1977 to less than 5 cases/100 000 inhabitants in 2002, with a peak of about 45 cases/100 000 inhabitants in 1984.

Prevalence of sheep and goats brucellosis has progressively decreased from 45,35% in 1995 (nearly 29.000 flocks controlled) to about 27% in 2002 (nearly 18.000 flocks controlled). Provisional data of 2003 show a prevalence of 13,96% of infected flocks in nearly 10.000 flocks controlled.

From the geographical point of view, the infection is more spread in central and in southern areas.

Regarding the status of flocks during the current year, 1% is qualified as M1 (Status unknown), 14% as M2+ (Positive), 30% as M2- (Negative), 38% as M3 (Vaccinated, free) and 17% as M4 (Officially free). During the meeting it has been reaffirmed that these are provisional data. In year 2002 the percentage of flocks classified as M2+ was about 20%.

*Evolution, current situation and perspective of ovine and caprine brucellosis in the Autonomous Region of Andalucía. Evolution of the main epidemiological indicators. Special actions in zones of high prevalence.*

The eradication program has been implemented in Andalusia for 7 years. One of the weak points is represented by the need of improvement in epidemiological analysis. Regarding this issue, a new form for epidemiological investigation has been introduced, visits to confirm the M1 status have been carried out to farms not included in the register of flocks, and data on prophylaxis campaign have been compared with data on premiums.

Evaluation of year 2003 shows that the 99% of flocks qualified as M3 or M4 have maintained their status, that the 49% of flocks qualified as M2 negatives and that the 14% of flocks qualified as M1 in 2002 have been classified as infected. These figures suggest that the disease is circulating mainly within M2 and M1 flocks.

Another weak point is represented by the possibility of contacts with positive flocks, due to transhumance and common pastures. This problem has been faced with specific programs, including sanitary qualification of pastures, division of pastures in order to achieve free zones, reinforcement of vaccination and diagnosis, information campaigns to farmers. In addition, special measures of destruction of seropositive animals have been implemented. These measures comprise an *in situ* notification and isolation of seropositive animals followed by an immediate slaughtering on the spot (i.e. in the farm with free removal of carcasses and destruction in Cat. 1 facilities).

Strategies of the eradication campaign vary according to both animal and flock prevalence in the area concerned. Areas with both animal and flock low prevalence are classified as “Type 1”. In these areas, vaccination is not applied, stamping out of positive flocks is foreseen, and animal introduction is banned. Areas in which animal prevalence is high and flock prevalence is low or vice versa are classified as “Type 2”. In these areas, vaccination of young animals is applied, together with slaughtering of positive animals. Areas in which both animal and flock prevalence are high are classified as “Type 3”. In these areas, vaccination of the whole flock is applied together with animal exit ban. Action foreseen for the future are to fit mass vaccination program to results of prophylaxis campaign, to reinforce young animals vaccination, and to use complementary diagnostic tools.

#### **4. Re-enforcement of the program: harmonization of GLP's in the official veterinary laboratories. F. Garrido.**

The Spanish Network of Official Veterinary Laboratories operating in the National Eradication Program was described. In the recent years, the National Reference Laboratory (NRL) has been working with the aim of a progressive converging of Spanish Network towards the European Norm ISO 17 025 as a framework that warrants the Good Laboratories Practices (GLP). The pillars of this strategy are based on the co-operation with the International Reference Laboratories and with the European Network of National Reference Laboratories.

The harmonization of GLP duties can be described according to 2 main areas:

1. Qualification of personnel.
  - Training stages in the NRL (Continuous).
  - Workshops (Periodical).
  - Executive courses and meetings.
  - Continuous Technical Advice.
2. Quality assurance of tests.

- Standardisation and QC of antigens, reagents and kits.
- Production of the National Standards Sera (Secondary Reference Sera)
- Production of Working Sera.
- Issue of Standard Protocols.
- Periodical Ring Trials.
- Consulting and confirmation of diagnosis.

The main subjects broached during workshops, courses and stages of personnel at the NRL are:

a. Bacteriology:

Laboratory Bio-safety: minimal conditions on facilities, equipments and personal protection according with UE and National legislation.

Sampling and isolation:

- Standard Procedures for sampling and isolation of *Brucella* spp. from living animals: from clinical samples (abortions, secretions and biopsies)
- Standard Procedures for sampling and isolation post-mortem: sampling from autopsy, processing of samples, microscopy and culture procedures.

Packing and transport of strains to the NRL

b. Immunology

Harmonization and/or validation of classical tests, and recent tests: RBT, CFT, Coombs, iELISA, cELISA, and FPA and Immunocapture Tests.

Accreditation steps of Laboratories according to:

- EN-45001 (Year 2000).
- ISO-17025 (Year 2002).
- Annual Ring Trial.

Meetings and ring trials on the EU Network of National Reference Laboratories.

c. Related Joint Tasks for Quality Assurance in the context of the Eradication Campaign.

- Bio-typing of *Brucella* spp.
- Studies on singleton reactors: Andalucía, Baleares, Canarias, Extremadura, Castilla-La Mancha and Castilla-León (on about 2,000 herds and flocks).
- Studies on large outbreaks. Bacteriological studies. Kinetic of the immune responses by using classical, recent and new serological tests.
- Other indicators of quality of the eradication campaign: blind sampling and bacteriological and immunological studies on animals slaughtered in the context of the eradication campaign (112 animals sampled).
- Continuous Bi-lateral Inter-Laboratory Exchanges of sera for assessing the accuracy, repeatability and reproducibility of the tests performed .
- Inter-laboratories validation of tests.

## 5. Farm visit

A Local Veterinary Unit prepared a visit to a medium-big size farm (500 milking ewes of the local breed “manchega”). The farm was an example of a moderate mechanised farm due to the incorporation of a young farmer. Ewes are milked twice a day and the flock grazes 450 Has. hired to a communal pool of landowners.

The activities related to the brucellosis program were explained by the vet responsible for the implementation that is contracted by the local farmers association ADS. Sheep population of that ADS is 12.600 heads and the time devoted by the vet to the brucellosis program is 50% of his annual working time. Other voluntary sanitary programmes are also carried out by the ADS.

In the municipality, intra-conjunctival vaccination of young animals is performed, but despite the non existence of clear lambing season, vaccination is only carried out once a year in each flock.

The strategy applied for maintaining the free status is based on the sampling of 25% of ewes are described in Council Directive 91/68/EEC

## **6. Experiences from other Member States: Brucella melitensis persistence and kinetics of the immune response in experimentally infected ewes. F. De Massis**

The aim of this study was 2 fold:

- Long term evolution of the infection and likelihood of spontaneous Brucella sterilization after prolonged sexual rest;
- Possible transmission of the infection to the offspring and possible development of immunologic tolerance to Brucella infection

Animals were infected and followed for 3 reproductive cycles. All ewes but 1 (45/46) aborted in the first pregnancy (isolation of Brucella melitensis biovar 3 from all the fetuses), no abortion occurred during the second and the third pregnancies. Although the majority of the sheep could clear the infection after 3 pregnancies, B. melitensis could be isolated in the milk of 4 ewes during the second AND the third pregnancies as well as from the tissues of 1 ewe at the end of the experiment.

Altogether these results of this experiment suggest that when infection is enzootic in a flock (i.e. long term persistence), serological and bacteriological investigations may not reveal the infection at the single animal level. Hence, depopulation of chronically infected flock is therefore, often warranted.

## **7. Recommendations**

1. Authorities at National and Regional level should ensure that a consistent well documented and well co-ordinated strategy is conceived and implemented in sufficiently large areas, unless exceptionally very specific local epidemiological areas can be defined and justified. This applies in particular to:
  - The strengthening of the vaccination policy until a 100% coverage is reached in the defined areas
  - The use of the 25% sampling (annex A.I.1.B.1 to Council Directive 91/68/EEC) for the maintenance of the free/officially free status of flocks, which has to be restricted to areas with less than 1% flock prevalence
2. A better control on the implementation of the eradication programme in the field is necessary. Official veterinary services must guarantee on structural basis that the actions in the field, especially in regard veterinarians of farmers associations (ADS) are better guided, managed and co-ordinated.
3. The Task Force appreciates the new measures taken as regards the sheep and goat movements and the national and regional authorities should ensure the necessary support and controls in order to implement these measures and prevent illegal movements.
4. The Task Force appreciates the new policy of slaughtering seropositive animals in the farm in Andalusia in order to avoid smuggling of positive animals, and recommends:
  - To report on results of this action

- To ensure also the follow-up of the remaining seronegative animals.

**REUNIÓN DE LA TASK FORCE, SUBGRUPO BRUCELOSIS OVINA Y CAPRINA.****CIUDAD REAL, 21 Y 22 DE OCTUBRE DE 2003.**ORDEN DEL DÍA (*AGENDA*)**MARTES 21 DE OCTUBRE.****TUESDAY, 21<sup>st</sup> OCTOBER.**

9:30 - 9:45	<p>Bienvenida e introducción.</p> <p><i>Welcome and introduction</i></p>
9:45 – 10: 15	<p>Estructura y distribución de la cabaña ovina y caprina en España.</p> <p><i>Structure and distribution of ovine and caprine livestock in Spain.</i></p>
10:15- 11:00	<p>El programa nacional de erradicación de brucelosis ovina y caprina por <i>Brucella melitensis</i> en España. Evolución, situación actual y perspectivas.</p> <p><i>The National Eradication Programme for ovine and caprine brucellosis by B. melitensis in Spain. Evolution, current situation and perspectives</i></p>
11:00 - 11:15	<p>Coloquio <i>Discussion.</i></p>
11:15 - 11:30	<p>Pausa y café <i>Coffee break</i></p>
11:30 – 12:10	<p>C.A. de Castilla-La Mancha. Estructura de la cabaña ovina y caprina. Estructura y organización de los Servicios Veterinarios. Organización y ejecución de la campaña.</p> <p><i>AR of Castilla-La Mancha. Structure of ovine and caprine livestock. Structure and organization of Veterinary Services. Organization and implementation of the campaign.</i></p>
12:10 – 12:50	<p>Evolución, situación actual y perspectivas de la brucelosis ovina y caprina en la C.A. de Castilla-La Mancha. Evolución de los principales indicadores epidemiológicos. Medidas especiales de actuación en zonas de elevada prevalencia.</p> <p><i>Evolution, current situation and perspective of ovine and caprine brucellosis in the Autonomous Region of Castilla-La Mancha.. Evolution of the main epidemiological indicators. Special actions in zones of high prevalence.</i></p>
12:50 –13:05	<p>Coloquio <i>Discussion.</i></p>
13:05 – 13:45	<p>C.A. de Andalucía. Estructura de la cabaña ovina y caprina. Estructura y organización de los Servicios Veterinarios. Organización y ejecución de la campaña.</p> <p><i>AR of Andalucía. Structure of ovine and caprine livestock. Structure and organization of Veterinary Services. Organization and implementation of the campaign..</i></p>

13:45 – 15:15	Almuerzo. <i>Lunch.</i>
15:15– 15:55	<p>Evolución, situación actual y perspectivas de la brucelosis ovina y caprina en la C.A. de Andalucía. Evolución de los principales indicadores epidemiológicos. Medidas especiales de actuación en zonas de elevada prevalencia.</p> <p><i>Evolution, current situation and perspective of ovine and caprine brucellosis in the Autonomous Region of Andalucía.. Evolution of the main epidemiological indicators. Special actions in zones of high prevalence.</i></p>
15:55 – 16:10	Coloquio <i>Discussion.</i>
16:10 – 16:30	Pausa y café <i>Coffee break</i>
16:30 – 18:00	<p>Coloquio general (todos los participantes)</p> <p><i>General Discussion (all participants)</i></p>
21: 00	Cena de bienvenida <i>Wellcome Dinner</i>

**MIÉRCOLES, 22 DE OCTUBRE.**

**WEDNESDAY, 22<sup>nd</sup> OCTOBER.**

9:00 – 12: 45	<p>Visita a explotaciones locales.</p> <p><i>Visit to local herds.</i></p>
12:45 – 13:30	<p>Reforzamiento del programa:</p> <ul style="list-style-type: none"> <li>- Medidas de co-ordinación del movimiento pecuarios.</li> <li>- Armonización de las BPL en los Laboratorios Oficiales de Sanidad Animal.</li> </ul> <p><i>Re-inforcement of the programme:</i></p> <ul style="list-style-type: none"> <li>- <i>Coordinating actions for animal movements.</i></li> <li>- <i>Harmonization of GLP in the Official Veterinaries Laboratories.</i></li> </ul>
13:30-13:45	Coloquio. <i>Discussion.</i>
13:45 – 15:15	Almuerzo. <i>Lunch.</i>
15:15 – 17:30	<p>Reunión del subgrupo.</p> <p><i>Meeting of the subgroup</i></p>
17:30 – 17:45	Pausa y café <i>Coffee break</i>
17:45 – 19:00	<p>Conclusiones finales (todos los participantes)</p> <p><i>Final conclusions and closing of the meeting (all participants).</i></p>