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REPORT ON THE
TASK FORCE MEETING
OF THE
“BOVINE TUBERCULOSIS”
SUB-GROUP

SALAMANCA, Spain
17-18 October 2002

REPORT OF THE
“BOVINE TUBERCULOSIS” TASK FORCE SUBGROUP
MEETING HELD IN SALAMANCA, SPAIN, ON 17-18 OCTOBER 2002

Participants: J. Ferris (Chairman),
Members of the tuberculosis Sub-group.
F. Reviriego and J.P. Vermeersch for the Commission,
Spanish CVO; CVO's of Asturias, Castilla y León and Valencia.
Representatives of the Veterinary Faculty of the University
Complutense of Madrid.
Representatives of the Spanish Central Veterinary Services and the
autonomous regions of Asturias, Castilla y León and Valencia.
D. Collins (see Annex 2)

Agenda: see Annex 1

Location: Salamanca, Castilla y León. SPAIN

DAY 1

The Spanish CVO, Concepción Sánchez welcomed the members of the sub-group to Salamanca and thanked the autonomous region of Castilla y León for hosting the meeting. She thanked those that facilitated and organised the meeting and hoped that the findings and recommendations of the sub-group and the Spanish commitment to eradication would result in final eradication of bovine tuberculosis from all of the country.

The Commission, represented by F. Reviriego, thanked the Central Authority, the CVO and the autonomous regions represented. He then introduced the task force sub-group by outlining the background and functionality of the group and the terms of reference of the Task Force.

The Chairman, J. Ferris, thanked the Spanish CVO for the introduction and F. Garrido and the Spanish colleagues for the work done in organising the meeting. He outlined that the sub-group members were all involved in running eradication programmes in their own countries and would, having listened to the details of the Spanish programme and the problems being experienced, would try to assist Spanish colleagues in overcoming the difficulties being experienced in the last stages of the Spanish TB eradication programme. He explained that this was not an inspection mission such as might be conducted by the FVO, rather it was an attempt to have the problems of TB eradication programmes discussed among colleagues. He introduced each of the members of the sub-group outlining their background in their respective countries.

C. Sánchez presented details on the Structure and Organisation of the Spanish Animal Health Service and outlined how the Central Authority and the Regional Autonomous Communities related to each other and the delivery of the eradication programme through the co-ordination committee.

Ana Redondo from the Spanish Ministry next gave a presentation on the structure of the bovine sector in Spain. There have been significant changes in this sector in recent times in that the number of dairy cows has dropped steadily from 1990 while the number of suckler cows has risen by 40% over the same period. The number of dairy holdings has dropped from 140,000- 50,000 over the last ten years and the average herd size rose from 7- 24 cows. Suckler cows and fattening cattle are distributed in different regions. There is extensive movement of calves/weanlings into the fattening areas particularly after the grazing season. Calves are slaughtered at an average weight of 261 kg at 12-14 months of age. A. Ruiz described the animal health identification and traceability systems that are in place in Spain. He went on to describe the ear tag, passport and herd registration system in some detail.

J.P. Vermeersch on behalf of the Commission outlined the Bovine tuberculosis situation in those Member States of the EU which received co-financing of the TB eradication programmes. Commission Decision 2002/667/EC has standardised the reporting structure and the definitions of the data presented. In Greece: overall the herd prevalence is low but in some individual prefectures the herd prevalence is very high. For various reasons coverage of the programme is not always complete. In Spain the coverage is not always 100%. During the last few years there has been a slight, decrease in disease levels of bovine TB overall in most regions following initial dramatic progress in most regions. In Ireland, the coverage is good, with a high prevalence overall, but with some data lacking for previous years. In Italy there has been a slight, decrease in prevalence for the whole country but high herd prevalence still remains in several regions. In Portugal the herd prevalence is quite low. In UK Northern Ireland there has been an increase in prevalence but some data is lacking for previous years.

J.L. Paramio, MAFF, presented the situation *viz a viz* the epidemiology of TB in Spain. Two principal constraints to eradication are the mountainous terrain, (being most mountainous country in the EU) and the handling of the animals kept in extensive systems is quite difficult. In the North dairy farming dominates while in the South beef production is the predominant system. The eradication programme initially concentrated on dairy cattle and was followed by beef cow production systems, now additional resources will be allocated to tackling the beef finishing systems. In the beef and more extensive farming systems, the cattle are not necessarily accustomed to human handling. Gathering the cattle presents its own problems with fighting amongst the animals and various dangers to both animals and operatives. In addition, goats can act as a source of infection as can wild fauna (deer/wild boar). Intercurrent infections such as Paratuberculosis can sometimes cause difficulties with eradication programmes. Nevertheless, despite the problems, progress in eradication has been significant from a very high prevalence initially in the early 90's, currently several regions are now close to eradication. The disease has virtually been eliminated in the dairy sector. Certain problems were experienced last year, for instance a labour problem in Galicia meant that the programme was not completed which significantly contributed to the lack of coverage in Spain as a whole. Otherwise, coverage is 96% of herds in the programme.

The legislative framework for the eradication programme is contained in Royal Decree 2611/1996, which implements Directive 64/432/EEC as amended. In 2001, 80% of herds were investigated which covered 95% of cattle in the national herd. The shortfall of 5% of herds was mainly accounted for by certain problems in Galicia, however these missing herds were tested during 2002.

The Canary islands are considered free of tuberculosis and so only a % of holding are investigated annually. In mainland Spain the eradication programme only commenced in early 90's, in some of these areas where the herd prevalence is still high, Spain is confident that the level will fall as the programme impacts. Ireland asked a question regarding the shortfall between the number of animals in Spain and the number of animals in the programme. In reply it was explained that the animals on holdings dedicated to the fattening of animals for slaughter are slaughtered very young and are never grazed on pasture land. These animals are considered a low risk for spread and are not currently subject to tuberculin tests.

After lunch the group was brought to two farms in the locality. One farm was a suckler farm of a native breed extensively farmed. The problems of testing such animals were quite obvious to the sub-group members. The second farm was a typical suckler herd producing calf to beef and experiencing a Tb problem.

On return from the farm visits, F. Garrido gave a presentation of the various laboratory based diagnostic techniques used in Spain. He detailed the isolation and identification process for mycobacterial species in the Spanish reference laboratories for mycobacterial diseases. He outlined the non-radiometric system for isolation of the mycobacterial complexes from clinical samples where 128 samples can be cultured simultaneously with oxygen consumption measured by computer reading the sample as positive or negative. The drawback of this system is that a contaminated sample may be read as positive and therefore confirmation is necessary. This system is also used to culture for *M. avium sub sp. paratuberculosis* and a very heavily infected ileo-caecal valve sample can be detected as a positive in 3.5 days with lower infection levels taking somewhat longer to confirm. Nucleic acid hybridisation is used for identification purposes. A single stranded DNA probe, which is chemiluminescent labelled, is used and the labelled DNARNA hybrids are measured using Gen-Probe system. Most isolations are completed in two weeks. The laboratory also has official control of the tuberculin and reagents Bovine/Avian PPD and IFN γ . Vaccination against paratuberculosis interferes with the immunodiagnosis of TB. Genetic fingerprinting allows differentiation between strains of *M. bovis* and enables epidemiological investigations into the origin and spread of tuberculosis. Almost 1% of strains isolated in cattle are similar to the caprine strain sequence.

The Veterinary Faculty of the University Complutense of Madrid provides assistance to the Spanish Ministry in the area of epidemiology. L. Dominguez outlined the studies conducted on the transmission of TB between domestic and wild species. Molecular biology is used in conjunction with traditional disease tracing investigations. Tuberculosis in wild animals has an impact and transmission occurs where habitats overlap particularly in pasture and at drinking areas. *M. bovis* has been isolated from red and fallow deer, wild boar, hare, Iberian lynx and cattle with the strain types isolated being also commonly found in cattle.

A discussion on the possibility for use of the IFN γ assay ensued. D. Collins emphasised that the IFN γ assay was most suited for use as a supplementary test in tuberculosis herds where the test could be expected to detect 2 out of 3 infected animals that were missed by the tuberculin test. However, the test needed to be carried out within 12 hours of sampling because the animals missed by the tuberculin tests were poor responders and would "pass" the IFN γ assay if the assay were delayed beyond this period.

DAY 2

T. Martínez, head of the Animal Health Services of the Autonomous Region Castilla y León welcomed the sub-group and the heads of the Autonomous Regions present to Salamanca. He outlined the demography of Castilla y León which is a predominantly agricultural autonomous region. He described the composition of the Official Veterinary Services of Castilla y León, its provincial regions and the Regional Animal Health Laboratory in León. There are 28,571 herds in total in Castilla y León with 8,949 in the Salamanca region; 1,540,440 bovines are distributed through these herds. The E.U. legislation is implemented by means of Decrees with specific rules and regulations for the region. Within the Animal Health Service there are two functions namely, economic and technical management. At provincial level, the Veterinary staff are in charge of general co-ordination. At field level, the veterinary officer downloads information from the office onto the field computer prior to conducting the skin test, blood tests etc., that are carried out by official veterinarians. It is also possible to identify herd list details in the field and download the test details etc. back to the office database.

The Eradication campaign commenced in 1991 prior this all actions were concentrated on dairy herds; action on beef herds did not commence until 1992 or in the Salamanca province until 1993. The computer database of the eradication programme was very important and was finally updated with all herd and animal data in 1998 (not referred to the TB programme). The third official objective was to increase the controls at herd level, this has been achieved by optimising the response such as the depopulation of heavily infected or problematic herds, control of animal movement and regulation of common grazing areas.

In 2002 a health register for common grazing areas was established to define the minimum requirements. In 2001 rules for qualification of fattening units were established. In these units, calves are brought to slaughter at around ten months of age. Fines are imposed on holdings that do not comply with National and EU legislation. An increasing number of animals have been tested each year. In 2001 0.65% of animals tested were positive and a total of 96.29% herds are now OTB. An average of 15-16 days elapses between diagnosis of the disease in the herd and slaughter.

Looking at the 2001 campaign the % of positive animals has been reduced from previous years, there has also been a steady decrease in both incidence and prevalence over the same period. In individual provinces, particularly, those with small numbers of herds/animals, small numbers of test failures can distort the picture for any particular year. In general only 6% of positive animals involve dairy cattle with the rest belonging mainly to those operating ranching systems.

The animal health service has identified areas where corrective measures would improve the situation these include:

- 1 Fencing on ranching systems with sucker cows
- 2 Common grazing where minimum requirements to access common grazing areas should be established.
- 3 Fighting bulls (which were only addressed for the 1st time in 1993).
- 4 Not all fattening units are currently under official control, this is one of the targets for 2002

- 5 There are diagnostic difficulties with anergic animals, which are only detected at slaughter and have obviously been missed during controls. The tracing of these animals requires improvement.
- 6 Wild life may be acting as a reservoir host and rules must be standardised for the investigation and follow up of TB occurrence in wild animals.
- 7 Training of farmers is a key point and particularly to adapt the farmer's mind to epidemiological situation.
- 8 Improved information dissemination programmes with farmer's groups are a priority.
- 9 Links between the animal health and public health divisions require improvement to feed back information from the slaughterhouse.

T. Sanchez, Head of the Animal Health Service of the Autonomous Region of Valencia outlined the demographics of the region which is composed of 3 provinces and with only 4.3% of the population involved in agriculture, the remainder are employed in industry and services. He outlined the structure of the official services where on Animal Husbandry Division there are 50 Veterinary Officers in 35 local offices in the Animal Health service, and a laboratory, which provides laboratory services for the region.

In total in 2001, the cattle population divided 70% beef and 30% dairy cattle; the cattle population has dropped over the years most particularly dairy cattle whereas the beef sector has increased relatively. The average dairy herd comprises 120 cows, suckler herds 36 cows, and fattening units which contain an average of 96 animals. Initially dairy herds only were investigated and in 1997 this was extended to include controls on the beef herd including fighting bulls.

On the dairy side in 1997 two programmes that we implemented on the residue side made the farmers very aware of quality measures, these programmes and Quota restrictions have concentrated the industry.

In the case of dairy herds this region is very close to eradication. Thus there are two differentiated sub-populations namely dairy cattle which are well structured and competently monitored, whereas the beef cattle sector is poorly structured, and frequently involves part-time farmers. There is also lack of specialisation and the feeding system is mainly grass based. Advisory bodies have concentrated on the beef sector addressing construction of housing, fencing, and handling facilities also diet, cleansing and disinfections and improvement in welfare and health standards. The introduction of the eradication programme to the beef sector has helped in improving standards. These farmers who were unable to reach the new required standards are leaving the industry. A consequence of which has been a relatively recent significant improvement in disease levels in these herds.

Overall in the Region there is a downward trend in disease levels since 1998 and this trend seems to be holding through 2002 but levels are still high with the individual animal level dropping faster than the herd level.

I. Alvarez, Head of the Animal Health Service of the Autonomous Region of Asturias gave an overview of the demography of Asturias, which comprises a single, mostly mountainous province. Agriculture contributes 2.5% to the Regional economy with animal production accounting for 78.25% of that economy. Cattle production represents 92.4% of the animal production figures. The Regional Environment and Fisheries Department oversees the animal health controls. The eradication division

comprises 30 teams of 2 persons, belonging to the staff of the Department of Fisheries and distributed through 40 local veterinary offices. The communications between the Veterinary Divisions of the Public Health Dept. and those involved in the provision of Animal Health services are very good.

This Region was one of the first to commence eradication campaigns, which started in 1960. Since 1986 all herds other than beef units, have been in the annual testing programme. There is good co-operation from the farmers who recognise the importance of eradication.

A full set of instructions and protocols is given to each veterinarian, who in addition has the history of each herd including the printout from the identification database. They are also provided with a full set of forms, including the form to correct errors on the identification/traceability database. Currently 99.63% of farms are tuberculosis free with the disease being diagnosed in 0.09% of animals. The programme is organised on a municipality basis into 6 zones. The number of herds is in decline but the number of animals is increasing. Routinely, TB positive herds have an epidemiological investigation carried out.

Mr. Alvarez then presented a detailed profile for each municipality for 2001 at herd and animal level. There has been a steady downward trend at both herd and animal level. In the year 2001, 106 herds were detected positive 75% by skin test and 25% in the slaughterhouse.

The region of Asturias is particularly interested in improvements in diagnostic methods for the detection of bovine TB. The region also considers common grazing areas as a distinct epidemiological unit, which requires additional controls on transhumance and animal movements. Additional TB control in other species is also desirable. In particular the region would like to link subsidies and support payments to those herd owners who collaborate with the eradication programme.

Following deliberations between the members of the sub-group the meeting reconvened. The Chairman Mr. Ferris outlined the draft conclusions and recommendations of the subgroup in relation to the Spanish TB eradication programme as follows:

Conclusions and Recommendations of TB Sub-Group

1. In Spain, the TB eradication programme commenced in the dairy sector with very good progress being achieved in most regions.

Autonomous Regions, now in the middle of their programme particularly with beef herds or experiencing other difficulties should look in detail at how the programme was managed in those other regions of the country where the TB has been virtually eliminated.

2. In other countries where large scale grazing of common pastures is practiced and TB is a problem, a pre and post movement testing programme of animals before they travel to the common grazing areas and again after they return to the herds of origin has been shown to be very cost effective.

It is recommended that the Spanish authorities should look at implementing such a programme in similar circumstances. In the same context, the issue of transhumance infection should also be examined as the two problems often coincide.

3. Effective epidemiological investigation of most disease breakdowns is an essential element in determining the disease control measures to be adopted.

In the case of bovine TB in Spain, it is recommended that the existing epidemiological investigation programme is reinforced and implemented on a wide scale basis and certainly in all cases of serious disease breakdowns. In particular, the epidemiological investigation format should be standardised so that it is unambiguous and user-friendly.

4. It is accepted by the subgroup that fattening farms as constituted in Spain are not major spreaders of bovine tuberculosis, however, regular testing of them does provide very important information in terms of forward and backward tracing of animals following disease breakdowns in such units. Spain should adopt measures to carry out more frequent testing of such herds especially in Regions with a high level of bovine TB.

Similarly, the efficient “feedback” of information following the discovery of TB lesions in a slaughterhouse to the relevant field Veterinary staff plays an important role in TB trace back programmes. In some areas, the “feedback” may not be as efficient as in others. Spain should standardise and enhance such a system.

5. The subgroup considers that where epidemiological or other evidence suggests a wildlife including goats involvement in a herd breakdown, that additional measures are put in place especially those regions where the wildlife involvement investigation and control measures maybe somewhat curtailed.

The group recognises the excellent work carried out in Spain in this regard but considers it should be expanded to all regions as appropriate.

6. The subgroup recognises the role that advanced information technology systems plays in the national TB eradication programmes.

In Spain, such systems are already operational in some regions, however, it should be rapidly implemented in the remaining autonomous regions whose recording systems await the full installation of such systems.

7. The subgroup recommends that every effort is made particularly at EU Commission level and indeed in Member States to encourage research on the development of new diagnostic tests to assist national TB eradication programmes. Within Spain, there are a number of laboratories which devote significant resources to such projects, every effort should be made at Central Government to provide maximum resources to allow such developmental research to continue.

Annex I

**REUNIÓN DEL SUBGRUPO DE TUBERCULOSIS BOVINA DE LA TASK
FORCE PARA EL SEGUIMIENTO DE LOS PROGRAMAS DE
ERRADICACIÓN.**

*Meeting of the Task Force for Monitoring National Eradication Programmes,
Subgroup Bovine Tuberculosis*

SALAMANCA, 17-18 DE OCTUBRE (17th and 18th October), 2002.

PROGRAMA.

AGENDA

17 de Octubre, 17th October

MAÑANA	Bienvenida e introducción.	10:00
<i>Morning</i>	<i>Welcome and introduction.</i>	
	Situación de la Tuberculosis Bovina en la Unión Europea.	10:10
	<i>Situation of Bovine Tuberculosis in the European Union (EU Commission.).</i>	
	Estructura y organización de los Servicios Veterinarios en España.	10:20
	<i>Structure and Organization of the Veterinary Services in Spain. Legal bases (CVO)</i>	
	Modificación del anexo B de la Directiva 64/432: prueba del interferón	10:40
	<i>Amendments of annex B to Directive 64/432: gamma-interferon test (EU Commission)</i>	
	Estructura del sector bovino en España. Sistemas de producción y	11:00
	<i>Structure of Bovine Sector in Spain. Production Systems and traceability (MAFF).</i>	
	Situación Epidemiológica de la Tuberculosis Bovina en España.	11:30
	<i>Epidemiological Situation of Bovine Tuberculosis in Spain. National Eradication Programme of Bovine TB (MAFF, Area of Epidemiology).</i>	
	Aspectos diagnóstico de la Tuberculosis Bovina. Resultados de los	13:00
	<i>Diagnostic aspects of Bovine Tuberculosis. Results of studies on isolated strains (MAFF, NRL for TB).</i>	
	Estudios epidemiológicos sobre la transmisión de la TB entre especies	13:30
	<i>Epidemiological Studies on the transmission of TB between domestic and wild species (University Complutense, Madrid).</i>	
	Conclusiones de la sesión matutina	14:00
	<i>Conclusions from the morning session</i>	

COMIDA - LUNCH

TARDE **Visita a explotaciones.** **16:30**
Afternoon *Visit to local herds.*

18 de Octubre, 18th October

MAÑANA **Campaña de Erradicación de la TB en la CA de Castilla León.** **9:00**
Morning **Situación epidemiológica, evolución y perspectivas. Aspectos problemáticos y medidas correctoras.**
Eradication Campaign of Bovine Tuberculosis in the Autonomous Region of Castilla-León.
Epidemiological situation, evolution, and prospects. Problematic aspects and corrective measures (Head, Animal Health Services of C-L) .

Campaña de Erradicación de la TB en la CA de Valencia. **11:00**
Situación epidemiológica, evolución y perspectivas. Aspectos problemáticos y medidas correctoras.
Eradication Campaign of Bovine Tuberculosis in the Autonomous Region of Valencia.
Epidemiological situation, evolution, and prospects. Problematic aspects and corrective measures (Head, Animal Health Services of Valencia) .

Campaña de Erradicación de la TB en la CA de Asturias. **12:30**
Situación epidemiológica, evolución y perspectivas. Aspectos problemáticos y medidas correctoras.
Eradication Campaign of Bovine Tuberculosis in the Autonomous Region of Asturias.
Epidemiological situation, evolution, and prospects. Problematic aspects and corrective measures (Head, Animal Health Services of Asturias) .

COMIDA - LUNCH

TARDE **Reunión del Subgrupo TF-TB.** **16:30**
Afternoon *Meeting of TF-TB Subgroup.*

Coloquio general: todos los participantes. **17:00**
General Discusión: all participants.

Conclusiones y recomendaciones. **18:00**
Conclusions and Recommendations.

Fin **19:00**
End of the meeting

There will be two breaks for coffee, two working lunches and a social dinner.