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REPORT ON THE

**Technical meeting of the
“BOVINE TUBERCULOSIS” SUB-GROUP
of the Task Force on monitoring animal disease
eradication**

**Brussels
25 April 2006**

**REPORT OF THE TECHNICAL MEETING OF THE “BOVINE TUBERCULOSIS” TASK
FORCE SUBGROUP HELD IN BUSSELS ON 25 APRIL 2006**

Participants:

Members of the subgroup: Susanna Sternberg Lewerin(Chairman), Alice Amado (PT), Lucas Domínguez (ES), Ludovica Pacciarini (IT), Margaret Good (IE), Nigel Clarke (UK), Dan Collins (IE, priv.)

Private expert: Douwe Bakker

Commission: Fransisco Reviriego Gordejo

Agenda:

1- Tuberculin

2-.Working document SANCO/10200/2006 in general and the short term measures in particular

1. Tuberculin

Douwe Bakker presented some background from TB eradication in the Netherlands, where the comparative test was used in the beginning of the eradication programme, but was later replaced by the single test (i.e. only bovine tuberculin). In 1999 there was an outbreak in a large herd, detected at slaughter. This herd was in an advanced stage of infection, with many reactors found. In 2002 some single cases were found.

As only a limited number of reactor animals are found, NL can “afford” some false positives and thus the single test is preferable, for a higher sensitivity. Problems have come up in recent years with herds infected with paratuberculosis, as this infection interferes with the tuberculin test.

D. Bakker then talked about tuberculins and evaluations that have been done in Lelystad. The method of preparation for PPDs has remained essentially the same since 1934. Potency and specificity testing should be done in guinea pigs and cattle, but the latter can currently only be performed at one facility in the EU, in Abbotstown (Ireland). In the EU directive there is currently only a requirement for testing in guinea pigs, which corresponds reasonably well (although not excellently) to expected field performance. Quality controls have shown large variations in potency of PPDs from different sources, as well as inter-batch variations from the same source, although the latter variation is less than the former. A reason for the lack of potency from some sources is thought to be lack of testing resources in some labs, that use weight as an estimate of PPD potency, which is clearly not enough. The variations are smaller between avian PPDs than between bovine PPDs. In some cases the avian PPD is much more potent than the bovine PPD from the same source, and this may lead to false negative reactions in the comparative skin test.

One problem that has been identified in PPD production is the maintenance of the production strains, where several passages on culture media are expected to cause large variations. Instead, stock cultures should be used. Moreover, the standard PPDs that are deposited at NIBSC (National institute for Biological Standards and Control) have deficiencies – there is loss of potency in the avian standards and there are large

variations between different vials of the bovine standards. The issue of how to control standards needs to be resolved.

The use of PPDs for γ IFN tests requires removal of the phenol, a procedure that usually involves loss of some antigenic fragments.

The boiling step in the preparation of PPDs leads to loss, or disintegration, of some antigenic fragments that can be identified in whole cell preparations of the same bacteria.

Simultaneous paratuberculosis infection interferes with the tuberculin reaction, a problem that must be kept in mind in areas with a high prevalence of paratuberculosis.

The following discussion focussed around standardisation and potency testing of tuberculins and how much needs to be in the EU legislation. The importance of standardising the PPDs used for TB control was emphasized as well as the importance of not using too weak an avian PPD as this will cause false negative reactions in the comparative test. The “mystery” around PPD must be solved (i.e. the exact antigenic compounds identified and an optimal mix defined), but that was deemed beyond the scope of this group and not an absolute priority. Standardisation requirements were regarded as immediately necessary. Whether PPD potency is a critical issue for TB eradication and free trade without spreading TB was discussed and it was agreed that the quality of PPDs used for testing is fundamental. Although it may be difficult to achieve a change on this point in some countries, the issue must be dealt with.

Whether the use of different bacterial strains for the production of PPDs is important was also discussed. Italian experience has shown that the growth stage of the bacteria is more crucial than what strain is used. The need for standardisation of γ IFN tests was also pointed out.

Based on the discussions it was agreed that a recommendation from the group should be that a Community Reference Laboratory for tuberculosis (i.e. all immunological tests as well as bacterial identification methods) be appointed, with the responsibility to standardise testing materials and procedures. The current situation poses a risk of impeding eradication programmes as well as spreading TB through trade (as inferior tuberculins may be used in both contexts).

2. Working document SANCO/10200/2206 in general and the short term measures in particular

In general, the outline of the document and the highlighting of various important aspects of TB control and eradication were regarded favourably. However, it was pointed out repeatedly that it is important that different measures are more or less applicable in different situations. Each MS should consider all the suggested measures and then apply those that are deemed appropriate for the current situation. For example, for Spain, diagnostics are crucial in some areas, due to interference with the tests by concurrent paratuberculosis infection. In this MS, the issue of communication between authorities responsible for the overall TB control and those responsible for abattoir surveillance (i.e. slaughterhouse inspections and reporting) is also vital. In Ireland, the wildlife issue is critical, and it is a matter of consideration in Northern Ireland, while in other MS it is regarded as less important. In many MS, stakeholder involvement could be improved, but this also needs to be applied differently in different MS.

The working document will be revised according to the discussions, focussing on part 2 of the document, after which it will be sent out to the entire group for comments. (Find attached the final version of document SANCO/10200/2006 as accepted by the subgroup).

It was agreed that the proposed short-term measures were all excellent as long as they may be applied to different degrees in different MS, depending on the different situations. However, all measures should be considered and evaluated by each MS, and explanations provided in the case a measure is regarded as inappropriate for a particular situation.

It was also pointed out that abattoir surveillance is of particular importance in herds/areas/regions with an officially tuberculosis free status, since for herds that aren't regularly tested, abattoir surveillance is the only means of detection of TB.

The various aspects of applying different measures at a different level or in a different way was brought up several times, e.g as regards use of the γ IFN test in different situations, severity of interpretation of the tuberculin test in different situations, and the application of different strategies for pre-movement testing.

It was agreed that the measures should be applied at a level above herd-level, on an "area" level that is epidemiologically relevant (i.e. not administrative areas)

Some of the suggested measures were discussed more specifically:

- Indicators and ore detailed epidemiological data – the indicators presently required at a community level were regarded as sufficient for that purpose, while other, more specific, indicators may be needed at MS level. The importance of data quality was emphasized and it was suggested that each MS be encouraged to identify useful indicators or detailed data that can help pinpointing problems and evaluate progress of a particular programme.
- Restriction periods were discussed and it was suggested that a minimum restriction period between the removal of a reactor from a herd and a second herd test of at least 90 days be proposed. The ensuing discussion revealed that this restriction period is already 6 months in some MS and in others, where a wildlife reservoir provides a constant source of infection in some areas, data indicate that prolonging the restriction period would not significantly affect the risk of cattle sold from the herd spreading the infection.
- Stakeholder involvement was discussed further and the importance of this issue underlined. Insurance schemes covering some of the compensation costs, involving the industry was mentioned, as well as the possibility of linking compensation to farmer co-operation. It was felt that positive incentives were preferable to financial or legal "threats", i.e. rewarding those farmers that co-operate and take voluntary preventive measures. The aims and strategies of the programmes need to be explained and promoted to all stakeholders. This may be accomplished differently in different MS, since the stakeholders may vary and be organised differently, and the most "convincing" incentives may vary between MS.
- The issue of milk hygiene was highlighted. In some MS, pasteurisation of all milk for commercial purposes is mandatory while in others unconsumed milk from a cow that has just been diagnosed with TB cannot be recalled even though it may pose a risk for consumers. In some areas goats are a particular problem when it comes to TB in milk, as there is no mandatory testing of this animal species. This lead on to

the issue of TB in other animal species. Although beyond the scope of this group, it is an issue that must be considered at community level. Once TB in cattle has been eradicated in most member states, the potential presence in other animal species may cause the infection to spread back to cattle, or directly to humans. It may currently present a risk of the infection spreading via other animal species into officially TB free herds or regions.

Finally, the definition of “bovine tuberculosis” for the purpose of the work of the subgroup was agreed on as: “The disease caused by infection in cattle with any of the mycobacterial species within the *M. tuberculosis*-complex”.