

## TUBERCULOSIS IN BRITISH DEER

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### INTRODUCTION

Fiona Stuart and co-workers described Britain's first experiences of bovine tuberculosis in farmed deer in May 1988 (Stuart et al., 1988). That report described an outbreak on three British farms in 1985 among deer imported from Hungary. All red deer involved were destroyed and in one case, involving a large park, the in-contact fallow, sika and Pere David deer were monitored; 378 culled deer being autopsied and cultured. These in-contact deer were all found to be free of infection but in 1989 an autopsy from the same park gave a positive culture, which was not encouraging.

Between 1985 and 1989 tuberculosis in farmed deer not only preoccupied deer farmers but came to feature regularly in the national press, television and radio. The problems arose when it was no longer economical to import into New Zealand deer from Ladyson's farm in Essex. These were mostly deer imported from Germany and Hungary with a view to onward transport to New Zealand. They were sold to 8 British deer farmers and 5 of these were subsequently found to have *M. bovis* infections in their herds. The affected English farms then entered a prolonged period of testing which, in most cases, ended up with the total slaughter of affected herds; others remain under movement restriction at the time of writing.

The press furore arose as the woeful lack of legislation to handle the position became clear. Despite requests by the British Deer Farmers' Association for MAFF to introduce compulsory ear tagging and recording of movements of farmed deer as long ago as during my chairmanship of the Association in 1980, nothing had happened. Nor, despite recommendations of government bodies had tuberculosis been made notifiable.

Finally, and of course it was this that provoked most irritation from deer farmers, whereas farmers whose cattle are compulsorily slaughtered under suspicion of tuberculosis receive 75% of the animal's value, deer received none. There was a period of prolonged political lobbying before finally in the summer and autumn of 1989 a package of legislation was introduced under which deer farmers were granted 50% compensation, tuberculosis was made notifiable, movement records and ear tagging became compulsory and a voluntary TB testing scheme was established. I will describe this scheme in more detail shortly but in the meantime I would like to cover the progress of one particular herd during the 1987-89 period.

### A HERD OUTBREAK OF TUBERCULOSIS

This herd was the first of those founded by myself and my partner, Carl Wheeler, in Sussex. The herd was established and managed with the very greatest care using the very best available bloodlines. However, following the introduction of three German stags from Ladyson's farm we came under movement restriction in spring 1988. Within a week of receiving the movement order all stock was skin tested using the comparative intradermal test but no bovine reactors were found. After the summer, 120 days later, the test was repeated and again no reactors were found. However a hind died that

Various strategies were then employed. With assistance from MAFF Central Veterinary Laboratory at Weybridge further skin tests were carried out during the winter 88/89 and during 89. In addition the herd was subjected to ELISA tests and a lymphocyte transformation test. On the basis of all these results the herd was split into three groups: those known to be infected, those possibly infected and those which were thought, on the basis of all tests, to be clear. The farm layout fortunately enabled strict segregation of groups using tarred roads. It was decided to attempt to treat the herd and efforts were made to import isoniazid and rifampicin (Towar, 1968).

Unfortunately an import permit was refused for these drugs and they had to be destroyed. The proposal had been to combine treatment of hinds with bottle feeding of calves snatched from their mothers at birth. Despite the impossibility of treatment it was decided to proceed with the rearing programme and 43 hind calves were taken from the known infected hinds at birth. Where possible they were removed before being suckled and of these 41 calves were reared successfully and at 5-6 months all were tested by the comparative intradermal test. 3 were deemed inconclusive and 3 reactors using the extremely stringent infected herd interpretation used in Britain. On this basis the animals were all destroyed. All were without visible lesion but on culture three, all in adjacent pens, were positive for *M. bovis*.

It is also worth mentioning that the stockwoman on the farm developed tuberculosis during the testing of the adult deer and is thought to have passed the infection to another member of her family so both were under treatment for some six months.

Following the total slaughter of all stock on this property and a period of six months without stock, the herd is now being recreated using thoroughly tested deer.

#### **TB INFECTION IN INDIGENOUS DEER**

Since, even by late 1988, all cases of bovine tuberculosis confirmed in farmed deer were related to imported stock there was optimism that the level of infection among native deer herds was low. Certainly 7 of 450 culled wild deer have been found with the disease but these were all restricted to the south west of England where tuberculosis in wild badgers (*Meles meles*) and also in cattle is known to be at a much higher level than the national average.

Unfortunately this optimism was unfounded. In 1989 a red deer farm stocked only with British park deer and from one other farm was found to have bovine tuberculosis. The herd that had provided the farmed deer was slaughtered and found to be without infection and attention was then focussed on the park. This was found to be infected. Subsequently a number of long established deer parks carrying fallow deer have also been found to be infected.

These parks pose a problem. They have no facilities to handle their deer and prefer to restrict sales to carcasses rather than depopulate the park. The herd that may have 200,000 - 300,000 visitors a year looking at it, albeit over a fence and which may, by the owner be thought an historically valuable genetic resource, cannot lightheartedly be slaughtered.

So much for the British predicament. What about the voluntary testing scheme or Deer Health Scheme, as it is known?

#### **THE UK DEER HERD HEALTH SCHEME**

Under the present administration, funds for agriculture are lacking. However, given

the fact that cattle farmers still receive 100% of all their tuberculin testing costs, and 75% compensation for reactors slaughtered, deer farmers not unreasonably feel some assistance is due for a farming enterprise whose production is not yet in surplus. In reality this has not been granted and an entirely voluntary scheme funded by the farmer has been embarked upon, but has not been well supported.

On entering the Scheme the farmer pays an administration charge and proceeds to test his deer using a comparative intradermal test. A blood sample is also taken for ELISA. The skin test is carried out by a veterinarian who must have attended a course run by the Veterinary Deer Society and so have become an LVI (Deer). We use .1ml of 0.5mg/ml avian tuberculin and 0.1ml of 1mg/ml bovine tuberculin injected by hand syringe into a very carefully prepared site (Griffiths, 1989, 1990). Two interpretations are used. Firstly the normal interpretation and secondly, in the case of a breakdown where a herd is known to be infected and M. bovis has been confirmed by culture, the infected herd interpretation. In order to measure the skin thickness to these tolerances a variety of instruments have been used, but that finding most favour at the moment is one designed for measuring skin thickness in man. As might be expected, there is some feeling that vets are being asked to interpret to too fine a tolerance and equally a large number of inconclusives and a small number of reactors are being found. Nevertheless of the fifteen herds that have entered the Scheme, eight have tested completely clear, three have had inconclusives and two have had reactors. There is cautious optimism that a number of herds will pass the 3 tests at a 120 day minimum inter-testing interval, to gain attested status by December of this year.

#### References:

Griffiths L., (1989) Experiences with TB skin tests in the field. Publication of the Veterinary Deer Society. 3(3) Griffiths L., 1990 TB Testing in farmed deer, In Practice 12,58.

Stuart FA, Manser PA and Mackintosh FG, 1988 Tuberculosis in Imported red deer (*Cervus elaphus*), Veterinary Record, 122, 508-511.

Towar DR, (1968) Isoniazid for Control of tuberculosis in a deer herd. JAVMA 153, 805-812.

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