

Bovine tuberculosis in badgers

In 1996, there were a total of 703 confirmed tuberculosis cattle herd breakdowns (ie cases in which one or more animals tested positive for tuberculosis) in Great Britain. Of the 491 confirmed breakdowns recorded in the western region of England, the origins of some 80 per cent were attributed to badgers. This latest annual MAFF report on bovine tuberculosis in badgers, presents the most recent data on the number and geographic distribution of cases detected in cattle and badgers. It also describes operational and research work undertaken during the last year.

The progress of several interesting lines of research into aspects of the difficult problem of elimination or control of this disease in cattle and badgers are briefly outlined in the report. The *in vitro* testing of a DNA vaccine candidate (a non-replicating DNA vector into which genes encoding protective antigens have been cloned) in badger cells, resulted in high level expression. A rapid, strong immune response was also observed *in vivo*, in mice immunized with this DNA. These results suggest that a single-shot vaccine for badgers might be feasible one day.

Further advances in understanding the epidemiology of the disease are likely to follow the development of strain typing by 'spoligotyping' (molecular typing). So far, this has revealed 14 different strains of *Mycobacterium bovis* (the causal agent) in cattle in Great Britain. It has also shown that the same spoligotypes were present in badgers and cattle in 11 out of the 12 studied herd breakdowns linked to badger removal operations. Collaborative work between the Central Veterinary Laboratory and the Central Science Laboratory on a model of the epidemiology of tuberculosis in badgers, incorporating the results of recent research, suggests that the disease is unlikely to cause a large depression in their population size. From the individual badger's point of view, tuberculosis, like many other infectious diseases of wildlife, is more of a welfare than a conservation problem.

A fresh look at the problem is also underway. Professor John Krebs, Chairman of the Independent Scientific Review of Tuberculosis in Cattle and Badgers, is expected to report shortly (in the autumn of 1997).

Bovine Tuberculosis in Badgers. Twentieth report by the Ministry of Agriculture, Fisheries and Food (1997). MAFF: London. 35pp. Paperback. Obtainable from MAFF Publications, Admail 6000, London SW1A 2XX, UK. Free.