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Bovine Tuberculosis in the United Kingdom: new approaches to an old disease

Darrell Abernethy
Veterinary Service, UK

Bovine tuberculosis (BTB) is a worldwide, zoonotic disease of cattle caused by *Mycobacterium bovis*. Eradication programmes, comprising movement controls and test-and-slaughter policies, have successfully eradicated the disease from many countries but progress has been impeded in some by the presence of wildlife reservoirs.

An eradication programme has been ongoing in the United Kingdom since the 1950s. It markedly reduced both the prevalence of BTB in cattle and, with pasteurisation of milk, the concomitant risk to human health. Clinical disease rarely occurs in cattle and infection in most herds is limited to one or two cattle that are detected by intradermal tests. Final elimination however, has proved elusive and endemic foci persist, mainly in the south-west of England, Wales and Northern Ireland. Reasons for the lack of progress in these regions include high cattle and herd densities, farming practices that increase cattle movement and contact, and BTB infection in the Eurasian badger (*Meles meles*), a native species that was identified in the early 1970s as a wildlife reservoir of infection for cattle.

New initiatives have sought to provide a better understanding of the transmission pathways for BTB, improve diagnostic tools and reduce the risk from infected cattle and badgers. An eight-year field trial in the West of England sought to quantify the impact of badger culling on the incidence of TB breakdowns in cattle herds. . Meanwhile, new in vitro diagnostic tests are being developed that will augment the intradermal test in cattle and facilitate capture-and-release programmes in badgers. Cattle husbandry practices have been examined to improve biosecurity on farms and reduce the risk of exposure to infected animals. Vaccines, currently being developed for use in both badgers and cattle, are likely to be the most promising solution, although it will be some years before they are available. In the meantime, eradication remains a significant challenge, requiring ongoing partnership between livestock producers and government agencies and ongoing development of the eradication programme to ensure it is epidemiologically relevant.