A field based approach to Bovine TB in England

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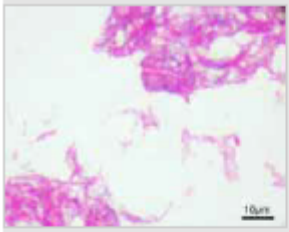

Mycobacterium bovis

For farmers, veterinary surgeons, and government, bovine TB is a frustrating, depressing, and expensive problem. There are some 85,000 cattle herds in Great Britain and just over 10% were restricted because of bovine TB in 2009. Of those herds that are restricted 80% are in England, 20% in Wales and very few in Scotland. A one tenth affliction doesn't sound like too much of a problem but, in England, the West Country holds over 80% of the restricted herds and in the far South Western counties one in four of all herds are restricted. Bovine TB is ruining milk and beef production through lack of progress with the disease and an increasing belief that the restrictions on livelihood will grow and grow.

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In any conversation about TB there is mention of 'hotspots'. These comments are generally clarified as 'hotspot counties'. The veterinary surgeons who carry out the testing on their client's farms identify hotspots within hotspots. Specific valleys, parishes or other particular areas are said to be 'rife' with TB. Some farmers identify groups of fields where cattle are grazed and then test failures follow. It is not surprising that bovine TB has increased in recent years. Our field based development group is working with farmers and their veterinary surgeons in local areas and a great deal is being clarified about this disease. It is this clarity that we invite you to scrutinise and comment upon.

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TB testing

European badger

Historically, bovine TB was kept under control through application of the Single Intradermal Comparative Cervical Tuberculin Test (SICCT), generally known as the TB skin test. Positive cattle were taken for slaughter and the farmer received compensation. The country became almost TB free, and twenty years ago the average duration of skin test failures with test and slaughter of the herd was six months. Now, with a similar test and slaughter scheme, the average duration of an outbreak nationally is twelve months. The test is a surveillance tool that identifies the TB positive herds effectively, so a positive is a positive, but in normal conditions the test leaves approximately 20% of positive animals undetected. Some herds in hotspots have failed the test repeatedly for several years.

The belief is that the current difficulties with TB in cattle are linked to the Foot & Mouth Disease outbreak in 2001 and the recent wet summers and mild winters.

Observations show that the herds in areas with healthy badgers do not have the problem of repeated bovine TB.

The badgers also need help to prevent the spread of TB in their population.

The primary aim of the tests is to capture the TB positive herds, place them under movement restriction to limit trading in infected cattle, and reduce spread of the disease from herd to herd. The test is therefore aimed at the herd, not the individual bovine and identifies infected animals not infectious or diseased animals. The latency effect of *Mycobacterium bovis* means that there is a period of infection before a positive skin test. This period is shorter with the gamma interferon laboratory blood test.

A link between bTB infection in badgers and infected cattle was identified in the 1970's. In 1992 it was made illegal to kill badgers, in order to stop badger baiting. Today farmers believe that they are open to criminal prosecution if they interfere with badger setts or kill badgers. The whole subject of badgers and TB is extremely sensitive and strong opinions are held. A project to cull as many badgers as possible, in an area of some two hundred farms in Wales, is due to commence as part of an extensive bio-security and testing approach commissioned by the Welsh Assembly. A Government programme of research to vaccinate badgers and cattle has been announced but the effectiveness of vaccination is expected to be low in populations harbouring the disease.

Our group, comprising a private veterinary surgeon with clients in the heart of a recognised bTB hotspot (Andrew Cobner), a wildlife assessor who has observed and monitored the situation with badgers and cattle for over a decade (Bryan Hill) and myself, have shared our understanding and experiences. The belief is that the current difficulties with TB in cattle are linked to the outbreak of Foot & Mouth Disease in 2001 and the wet summers and mild winters.

During the spring and summer of 2001, herds of cattle and flocks of sheep infected with the Foot & Mouth Disease virus were slaughtered together with contiguous herds and flocks. Badgers thrive on grazed, well manured grassland. Typically there will be higher populations of badgers on land grazed intensively by cattle, with dung pats and short grass. Fewer badgers populate land grazed by sheep and the activity of badgers is directly influenced by land management, grass length and stocking density. With the slaughter of the cattle herds went the plentiful food source for the badgers, that matched their population, and so traditional badger communities broke up. Increased fighting between badgers was observed and over the next two summers, as farming readjusted, the badgers established new territories but the stress had encouraged infected badgers to become infectious.

Recent summers have been very wet and extensive national flooding has been reported. Local streams have regularly risen and setts have been deluged, causing deteriorating conditions for animals living underground with a respiratory disease, and the numbers of unhealthy badgers has increased. It has become widespread for farmers to set up pheasant shoots as alternative income and the badgers enjoy food from the pheasant feeders throughout the winter. Until 2010 there have been mild winters and so a greater number of unhealthy animals survived.

Badger communities evict unhealthy animals. A healthy community marks their boundaries with latrines and unhealthy animals are driven beyond the boundary. These stressed badgers may link up with others or they may live a nomadic life until death. Some badgers are half sized, sickly animals that are afraid of their own kind. It is the unhealthy badgers that we believe spread disease to cattle.

A local area wildlife assessment and management approach to reduce bovine TB is new to the United Kingdom.

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The goal is "Healthy Badgers and Healthy Cattle."

Working in areas of ten square miles, the activity of the badgers, their territories and the location of unhealthy or 'skanky' badgers are assessed and their location matched on a map with the location of the cattle. The farm boundaries and land ownership cease to be important. Many farms have parcels of land separated from one another. The picture that this provides is extremely interesting to the farmers and their veterinary surgeons and offers a means of reducing the transfer of infection.

The planned programme is to achieve Healthy Badgers and Healthy Cattle. Our observations show that the herds in areas with healthy badgers do not have the problem of repeated bovine TB. Farmers do need healthy badgers and by participating in the work cattlemen have shown a willingness to co-operate in this, even if in nothing else. The badgers also need help to prevent the spread of TB within their population. In many TB hotspot areas healthy badgers are in decline.

Our group aim is to train more assessors, work in hotspot areas, involve veterinary surgeons in ongoing advice and to seek out and remove the skanky badgers. A film 'Bovine TB – The Way Forward' introduces the idea of identifying unhealthy badgers (www.chrischapmanphotography.com). We intend that the project is licensed by Government to remove the unhealthy badgers in an area, on one day, with trained people. A local area wildlife assessment and management approach to reduce bovine TB utilising skilled countrymen is new to the UK.

Further information is available at www.agmed.org.uk/projects.htm.

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