



Livestock Notifiable Disease

Factsheets

Bluetongue

If you suspect signs of any notifiable disease, you must immediately notify a Defra Divisional Veterinary Manager.

Definition

Bluetongue is an insect-borne viral disease to which all species of ruminants are susceptible, although sheep are most severely affected. However, cattle are the main mammalian reservoir of the virus and are very important in the epidemiology of the disease. It is characterised by changes to the mucous linings of the mouth and nose and the coronary band of the foot. Bluetongue is present when it is confirmed by laboratory tests that the Bluetongue virus (BTV) is circulating in an area.

History and spread of the disease

Bluetongue was first described in South Africa but has since been recognised in most countries in the tropics and sub-tropics. Cases also occurred in Europe in Bulgaria, Croatia, Macedonia, Kosova and Yugoslavia. Serotypes 2, 4, 9 and 16 have been involved. These cases have been well north and west of its normal distribution. It appears that the virus has spread from both Turkey and North Africa.

In July 2001 it appeared that the virus might have overwintered in Corfu and Italy. One possible reason for the changing pattern of Bluetongue disease in the Mediterranean region is climate changes. Further changes could lead to the disease spreading northward. Bluetongue has never been recorded in Great Britain.

Cause

Bluetongue is caused by a virus within the Orbivirus genus of the family Reovirades. At present 24 distinct serotypes have been identified as a result of serum neutralisation tests. The virus is transmitted by a small number of species of biting midges of the genus Culicoides. These vectors - insects that carry the disease- prefer to feed on large animals. The main transmission cycle is between the Culicoides midge and cattle, with sheep being infected when cattle are not present or the midge population is high. Thus, cattle can be used to detect the presence of BTV virus. Peak populations of vector Culicoides occur in the late summer and autumn and therefore this is the time when Bluetongue is most commonly seen.

Symptoms and diagnosis

The clinical signs can vary from inapparent to mild or severe, depending on the virus strain and the breed of sheep involved. Deaths of sheep in a flock may reach as high as 70 per cent. Animals that survive the disease will lose condition with a reduction in meat and wool production.

In sheep, the disease is characterised by fever that may last for several days. Increased respiration and hyperaemia of the lips, mucous linings of the mouth and nose and eyelids,

accompanied by excess salivation and frothing follow this. Nasal discharges are common. There is sometimes oedema (abnormal swelling) of the head and neck. The hyperaemia and oedema may result in lameness and recumbency. Animals can lose condition rapidly, including muscle degeneration. Infection during pregnancy may result in abortions and congenital abnormalities.

In cattle, the disease cannot be diagnosed on clinical grounds and requires laboratory testing for confirmation.

Confirmation of Bluetongue disease

Under internationally agreed guidelines (OIE) Bluetongue is unusual in that the disease is only confirmed when there is evidence that the virus is circulating between animals and vectors in an area.

Legislation

The Bluetongue Order 2003 came into force on 19 February 2003. It implements Council Directive 2000/75/EEC in England. The Directive lays down specific measures for the control and eradication of Bluetongue. Similar legislation applies in Scotland, Wales and Northern Ireland. Essentially, the measures involve restrictions with large protection and surveillance zones (100 km and 150 km minimum radius respectively) around the infected holding. The legislation provides for movement restrictions on suspicion of the Bluetongue virus circulating in an area and, where possible, confining animals indoors at times when the vectors are active. It also provides for eradication of the disease by control of the vector, and if appropriate slaughter and/or vaccination.

Contingency Planning

We are required under the terms of the Directive to have a contingency plan approved by the Commission. The plan follows a standard format and provides a broad overview of what will take place during an outbreak. The draft contingency plan is available for download. Defra held a meeting on 24 October 2002 with key organisations to discuss options for a more detailed disease control strategy. The discussion paper has been revised to take account of the views of the meeting. Strategy document . Detailed implementation plans will be drawn up in due course.

Pictures of the disease



A culicoides biting midge
(Photo credit: Crown Copyright)



Nasal discharge, salivation & oedema of the muzzle
(Photo credit: Crown Copyright)



Blood fed, adult female
Culicoides sonorensis
(approximately 2 mm in length)
(Institute for Animal Health)



The feet of sheep with bluetongue are often affected with coronitis & laminitis causing lameness (Institute for Animal Health)



Blood fed female *Culicoides obsoletus* (approx. 1.5 mm length)
(Institute for Animal Health)



Hemorrhage of the pulmonary artery
(Mariano Domingo, Dept of Pathology, Autonomous University of Barcelona)

Information current of June 16, 2005