

BLUETONGUE



This disease
is known to
occur in
Afghanistan.



1. Definition

Bluetongue (BT) is an acute, insect-transmitted viral disease affecting primarily sheep, and characterized by lameness, oral erosions, and stiffness.

2. Etiology

Bluetongue virus (BTV) is a member of the *Orbivirus* genus in the Family Reoviridae. There are 24 serotypes of BTV identified.

3. Transmission

BTV is transmitted through the bite of an infected *Culicoides* fly. These flies are biological vectors. Virus can also be transmitted vertically from viremic dams to the developing fetus or from male to female through semen during the period of peak viremia. Cattle can be viremic for several weeks, and so they act as temporary reservoirs of the virus.

4. Species affected

BTV infects many ruminant species but disease is usually manifest only in sheep. Cattle, goats, and camels can be infected, as well as many wild species of ruminants.

5. Clinical Disease

Incubation period is 7-10 days. Morbidity is variable, but often high. Sheep become febrile, and soon after that there is excessive drooling

along with the development of oral erosions. Buccal and nasal mucosa, as well as tongue, may become swollen and hyperemic, and rarely cyanotic (but this rarely seen feature is the source of the name of the disease). Hyperemia of coronary bands occurs along with the onset of lameness. In severe cases sloughing of hooves is possible. In addition, animals will be weak, depressed, and unwilling to walk. Mortality with BTV infection is usually less than 10%. Recovered animals may have a dark line in the wall of the hooves, or may have a wool break. Virus can cross the placenta, causing abortion, stillbirth, or congenital abnormalities.

6. Pathological findings

Pathological findings depend on the strain of the virus and host susceptibility. In the worst cases, the swelling of the oral mucous membranes creates facial edema. Erosions in the oral and nasal cavities may progress to ulcers and be covered with necrotic debris. Crusty exudates may be present at the nares. Hyperemia and occasional erosions are present in the reticulum and rumen. In some cases there is a terminal pulmonary edema and these animals will have abundant froth in the trachea. A significant lesion that is thought to occur only in BTV infection is hemorrhage within the pulmonary artery at the base, near the heart. Striated muscle, especially of the limbs, may have areas of pallor indicating acute necrosis.

7. Diagnosis

Diagnosis is based on typical clinical signs and known presence of *Culicoides* in the area. Differential diagnoses include: white muscle disease, foot rot, and foot-and-mouth disease.

8. Treatment

Supportive care may help an animal to survive infection with BTV. Supplying soft food, cleaning the nares and oral cavity of debris, and ensuring easy access to drinking water will all help.

9. Prevention and control

Vaccination has been the primary means of controlling BT disease in sheep with live attenuated vaccines. Vaccine serotypes should be matched to those circulating in the area to prevent introduction of a novel serotype. Many viruses can cross the placenta to infect the fetus at a critical period of development resulting in abortion or malformation, especially of the nervous system. Control of the *Culicoides* vector will help to decrease spread, but is challenging.