

VS Discusses BTV-8 at Denver symposium

The U.S. Department of Agriculture (USDA) Animal and Plant Health Inspection Service (APHIS) Veterinary Services (VS) held a symposium on bluetongue virus serotype 8 (BTV-8) in July in Denver. Featuring presentations by international experts, the meeting was attended by State animal health officials, academic researchers, industry representatives, and VS personnel.

The purpose of the symposium was to provide a broad overview of the virus and its effect on animal agriculture, to discuss Europe's experience with the virus, review the latest research, and explore possible implications for North America.

The World Organization for Animal Health (OIE) lists bluetongue as a multispecies disease of importance to international trade. Bluetongue is characterized as an infectious, noncontagious, arthropod-borne viral disease affecting many domesticated and wild ruminants. Clinical disease is most commonly seen in sheep but Type 8 disease is being seen in cattle.

Before 1998, BT was considered an exotic disease in Europe. From 1998 through 2005, at least 6 BTV strains belonging to 5 serotypes (BTV-1, BTV-2, BTV-4, BTV-9, and BTV-16) were present in the Mediterranean Basin. Since August 2006, BTV-8 has caused 30,000 outbreaks in northern Europe. The virus first emerged in the Netherlands in August 2006 and has been identified in Belgium, the Czech Republic, Denmark, France, Germany, Italy, Luxembourg, Poland, Spain, Switzerland, Sweden, and the United Kingdom. The European animal-health community is monitoring virus spread, identifying new arthropod vectors, and evaluating control measures, including vaccination, livestock movement restrictions, and vector control. The disease has been costly. In the United Kingdom, vaccination costs alone carried a price tag of \$30-40 million in 2008.

Among the key questions regarding the European BTV-8 occurrence are:

- How far will the virus spread?
- How does it overwinter?
- Has global climate change played a role in its spread?

- Will vaccine provide clinical protection and limit the geographical spread?
- How was it introduced from sub-Saharan Africa?
- What are the specific vectors and how can they be controlled?

Also of interest is the risk from other related orbiviruses including the African horse sickness and epizootic hemorrhagic disease (EHD) viruses.

Bluetongue in the United States

In the United States, bluetongue was first recognized in sheep in 1951 in Texas. Now, it is endemic in many States and causes sporadic disease outbreaks, most commonly in sheep and deer. Infection in U.S. cattle is usually inapparent. However, endemic BTV status is a serious constraint on cattle and bovine semen exports. Worldwide, 24 serotypes of BTV have been identified, and five of these (BTV-2, 10, 11, 13, and 17) are considered endemic to the United States. Since 1999, eight additional serotypes (BTV-1, 3, 5, 6, 14, 19, 22, and 24) have been identified in the United States. Postulated sources of BTV include infected insects introduced by wind or infected imported animals.

In 2007, BT was diagnosed in farmed stock in Montana. Some Wyoming ranches reported sickness and mortality in sheep herds; it was confirmed as BTV-17. While BTV-17 is an endemic strain, the increased virulence seen in this outbreak was unexpected. BT was also observed in wildlife, including pronghorn and white-tailed deer. Hemorrhagic disease, whether caused by BTV or EHDV, is a top concern of the white-tailed deer industry.

Amplified surveillance needed

Meeting participants discussed the need for amplified surveillance in the United States and a response plan in the event of a BTV-8 outbreak here. Other key points included recommendations for discussions/possible actions by the United States Animal Health Association and the National Assembly of Animal Health Officials; outreach to the veterinary community, livestock producers, and wildlife biologists; collaboration with the international community; the increasing need for research and harmonization of diagnostics; and a plan for procuring funding.