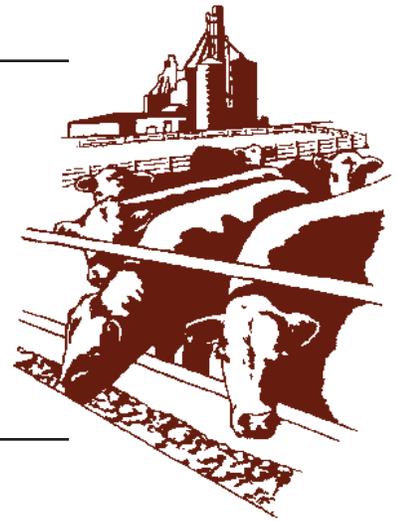


# Beef Cattle Handbook



BCH-3205

Product of Extension Beef Cattle Resource Committee  
Adapted from the Cattle Producer's Library

## Bluetongue in Cattle

Clell V. Bagley, Extension Veterinarian, Utah State University

Bluetongue (BT) is a viral disease that is spread mainly by one specific type of gnat. Other gnats and bloodsucking insects may occasionally transmit BT, but they are much less important in its transfer. Cattle are the main reservoir for overwintering the virus in temperate climates. Infection occurs when gnats, after feeding on infected cattle, continue their blood meals with other cattle and sheep. Bluetongue can also be spread by bloodsucking lice, soft ticks, biting flies, contaminated needles, and infected semen.

There are 21 strains of BT virus that have been identified worldwide. Five are present in the United States: types 2, 10, 11, 13, and 17.

### Clinical Signs

Bluetongue is usually a much more serious disease in sheep than in cattle. A closely related virus causes epizootic hemorrhagic disease (EHD) in deer. The fatality rate is high for this virus in deer, but its effects on cattle and sheep are relatively mild.

There is still disagreement as to the extent of the clinical effects of BT in cattle. Some researchers feel it is a common cause of disease problems, others say it is a rare problem. It is generally accepted that in the majority of infected adult cattle, the signs are inapparent. There are considered to be three different clinical manifestations of BT in cattle:

1. Reproductive effects including abortion, infertility, mummification, and stillbirth.
2. Congenital defects with weak or dummy calves, deformed legs and feet, blindness, persistent cover-

ing of the gums over the front teeth, overshot lower jaw, and white-eye. The most susceptible period for the fetus to become infected is 60 to 140 days into the pregnancy. Those affected later may still become latently (persistently) infected.

3. Persistently (latent) infected cattle with a hypersensitive reaction. Though apparently infected earlier, these animals show no evidence of illness until they are reinfected by the initial strain of the virus or by a second strain of the virus. The resulting disease condition may be moderately to extremely severe. Some of the signs identified include ulcers of the mouth, nose, esophagus, trachea, and rumen; lameness with an inflammation of the top of the hoof, laminitis, and hoof cracks; inflammation of the skin with loss of hair, sloughing of patches of skin, presence of an exudate and crusts on the skin surface, a burned muzzle, ulcers on the teats and udder; muscular stiffness; shallow rapid respiration with excessive salivation in stringy, long strands; and a swollen, protruding tongue. The temperature may be 106°F.

### Seasonality

Bluetongue is usually seen from midsummer until shortly after the first hard frost, when the gnats become inactive. The congenital defects would not become evident until calving time. In areas with a mild winter climate, the gnats may be active year-round, and the disease could appear anytime.

### Diagnosis

Blood tests for antibodies are available for BT. A blood

sample collected from a suspect calf before it has nursed can be diagnostic. The virus can also be isolated from heparinized blood and tissues, but this is a time-consuming effort and only a few laboratories attempt it. Freezing of tissues is detrimental to the BT virus and may make those tissues of no value for virus isolation.

Other diseases that must be considered include BVD, IBR, vesicular stomatitis, mycotic stomatitis, and the foreign diseases of foot and mouth disease and rinderpest.

### **Export**

Many countries require a negative blood test for BT before the animal may enter. This must be considered, and additional animals prepared and tested, in order to allow for removal before export of those that test positive. Actually, many animals that test negative may actually carry the virus, but so far that fact is largely ignored in the export system. Some countries may not accept animals from areas where BT has been diagnosed.

### **Prevention**

There is no BT vaccine currently available for cattle. One is available for use in sheep (for type 10). Use of a vaccine in cattle would further complicate the issue of positive blood tests and may well prevent export of those vaccinated.

Some control of gnat populations may be gained by draining stagnant water areas and getting rid of puddles and muddy, debris-filled water areas. The use of insecticides on these areas may also be of some help. Periodic spraying of the animals may be of very limited benefit. The gnats feed primarily in early morning and evening and do not enter buildings, so housing of the cattle except during the sunlight hours of the day may be of benefit in certain situations.

Caution must be used with the use of needles on multiple animals in bluetongue areas, and with equipment used for castration, dehorning, etc., to avoid spread of the virus by the blood on these instruments.

Reprinted from CATTLE PRODUCER'S LIBRARY CL667

#### **Author:**

Clell V. Bagley, Extension Veterinarian, Utah State University

This publication was prepared in cooperation with the Extension Beef Cattle Resource Committee and its member states and produced in an electronic format by the University of Wisconsin-Extension, Cooperative Extension. Issued in furtherance of Cooperative Extension work, ACTS of May 8 and June 30, 1914.

BCH-3205 Bluetongue in Cattle